TOSHIBA

TOSHIBA Thermal Printer

B-850 SERIES

System Mode Manual

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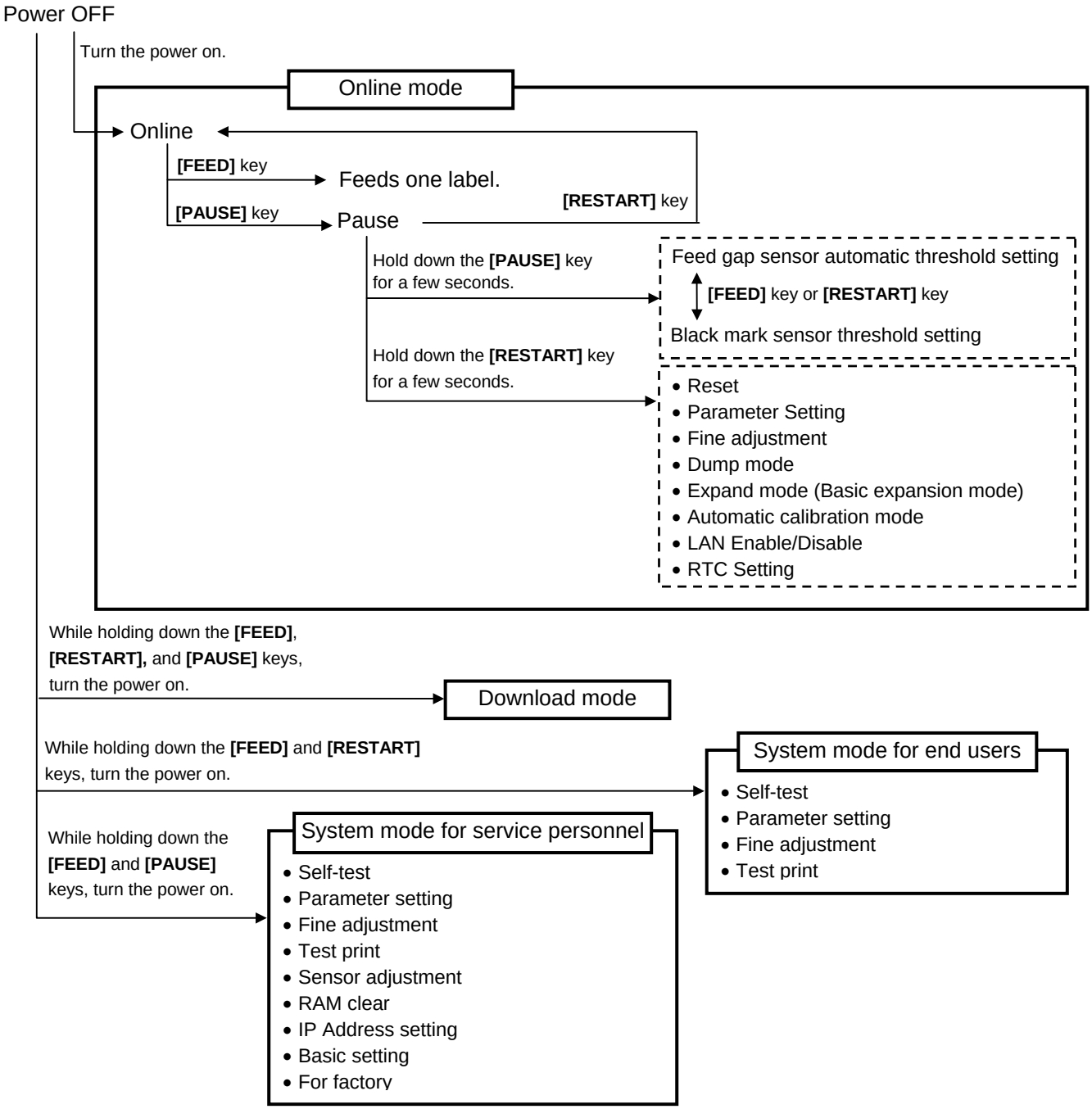
1. INTRODUCTION

This document describes key operations using the keys and LCD display on the printer that you can operate on a printer alone. Key operations are performed in the following four printer setting modes:

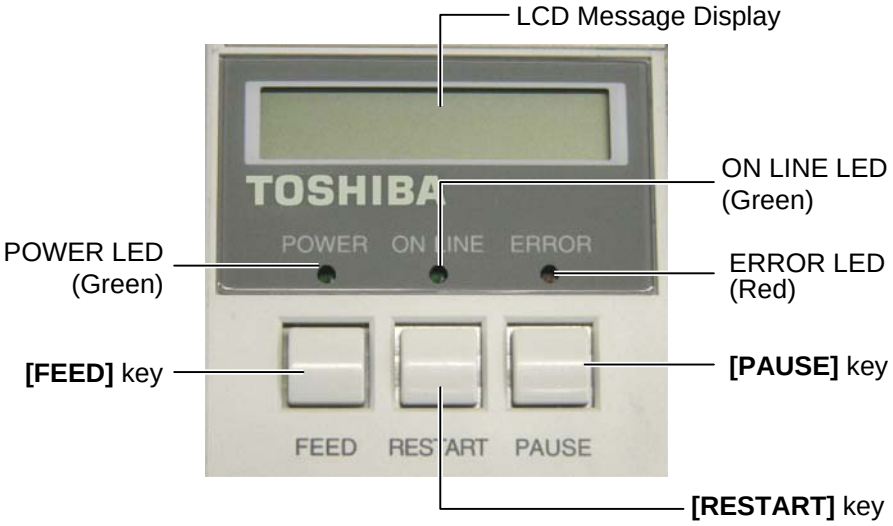
- Online mode where a pause, reset, automatic threshold setting, etc. are performed.
- Download mode where a firmware downloading is performed.
- System mode for service personnel where a self-diagnosis, printer parameter settings, RAM clear, IP address setting etc. are performed.
- System mode for end user where a self-diagnosis, printer parameter settings, fine adjustment, etc., which are same functions as those in System mode for service personnel, are performed.

1.1 Key Operation Flow


Power OFF
Turn the power on.
Online mode
Online
[FEED] key
Feeds one label.
[PAUSE] key
Pause
[RESTART] key
Hold down the [PAUSE] key for a few seconds.
Feed gap sensor automatic threshold setting
[FEED] key or [RESTART] key
Black mark sensor threshold setting
Hold down the [RESTART] key for a few seconds.
• Reset
• Parameter Setting
• Fine adjustment
• Dump mode
• Expand mode (Basic expansion mode)
• Automatic calibration mode
• LAN Enable/Disable
• RTC Setting
While holding down the [FEED], [RESTART], and [PAUSE] keys, turn the power on.
Download mode
While holding down the [FEED] and [RESTART] keys, turn the power on.
System mode for end users
• Self-test
• Parameter setting
• Fine adjustment
• Test print
While holding down the [FEED] and [PAUSE] keys, turn the power on.
System mode for service personnel
• Self-test
• Parameter setting
• Fine adjustment
• Test print
• Sensor adjustment
• RAM clear
• IP Address setting
• Basic setting
• For factory

1.2 Operation Panel

The figure below illustrates the Operation Panel and key functions.



The LCD Message Display is a 16-character x 1-line display, which shows messages in alphanumeric characters and symbols to indicate the printer's status.

There are three LEDs on the Operation Panel.

LED	Illuminates when…
POWER	The printer is turned on.
ON LINE	The printer is ready to print.
ERROR	The printer is in an error state.

The **[FEED], [RESTART]** and **[PAUSE]** keys function as described below.

FEED	Feeds or ejects one media. Adjusts media to a proper position if the media is not properly positioned by feeding one or two blank media before printing. Prints data in the image buffer on one media according to the system mode setting.
	In system mode, this key is used to select various parameters or to set a fine adjustment value in the negative direction (-).
RESTART	Resumes printing when the printer is in a pause state or an error state. Restores the same state as when the power is turned off and on again.
	In system mode, this key is used to select various parameters or to set a fine adjustment value in the positive direction (+).
PAUSE	Stops printing temporarily. Programs threshold values.
	In system mode, this key is used as an enter key.

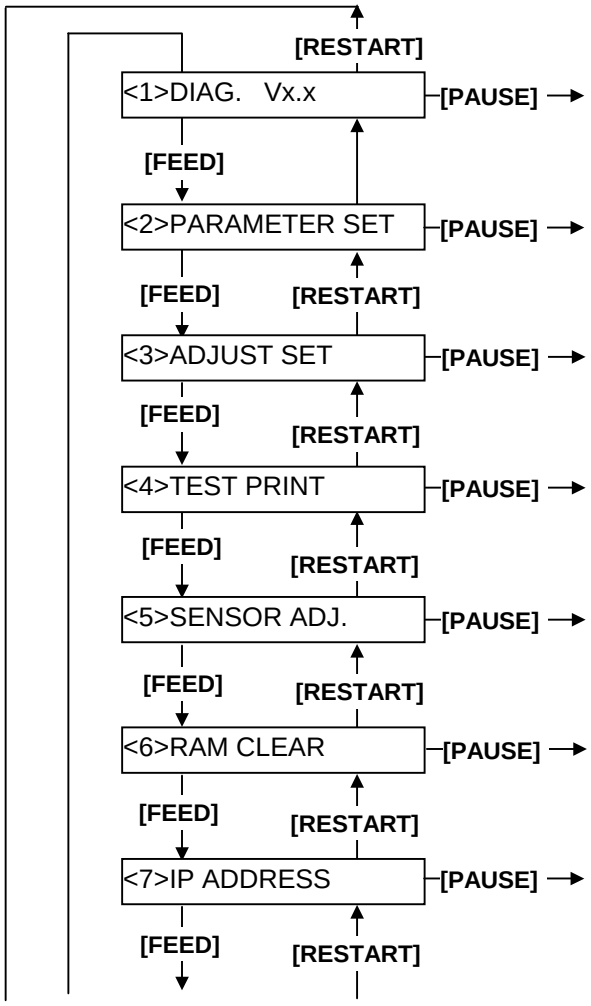
2. SYSTEM MODE

System mode consists of nine main menus: Self-diagnostic test, Parameter setting, Printer parameter fine adjustment, Test print, Sensor adjustment, RAM clear, IP address setting, Basic setting, and Factory mode.

Each menu is used for the following purposes:

- To check and print the system status, the Maintenance Counter, and the Print Head Element.
- To set the parameters for the communication with the host computer, and the printer functions such as the language for LCD message, Feed key function, etc.
- To make fine adjustment related to the media issue.
- To perform a test print for checking print quality.
- To check the status of the sensors and to set the threshold of the media sensor for pre-printed media.
- To perform a Maintenance Counter clear and Parameter clear.
- To set the IP address
- To set the Basic setting
- To perform the factory mode

To enter System mode, turn on the printer while pressing the **[FEED]** and **[PAUSE]** keys at the same time. Hold both keys until "<1>DIAG. Vx.x" message appears on the display.



This is the start of the Self-Diagnostic Test menu. → **Section 2.1**

This is the start of the Parameter Setting menu. → **Section 2.2**

This is the start of the Printer Parameter Fine Adjustment menu. → **Section 2.3**

This is the start of the Test Print menu. → **Section 2.4**

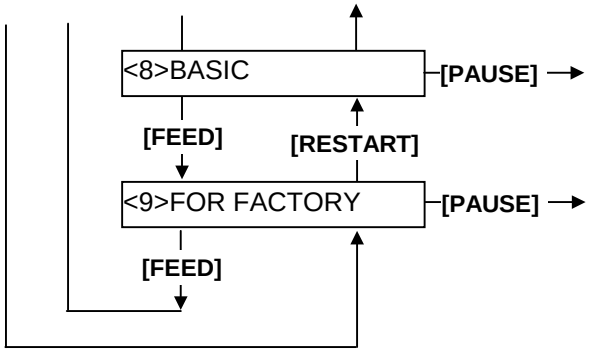
This is the start of the Sensor Adjustment menu. → **Section 2.5**

This is the start of the RAM Clear menu. → **Section 2.6**

This is the start of the IP Address Setting menu. → **Section 2.7**

Continued on the next page.

Continued from the previous page.



This is the start of the Basic Setting menu.
→ **Section 2.8**

This is the start of the Factory Mode menu.

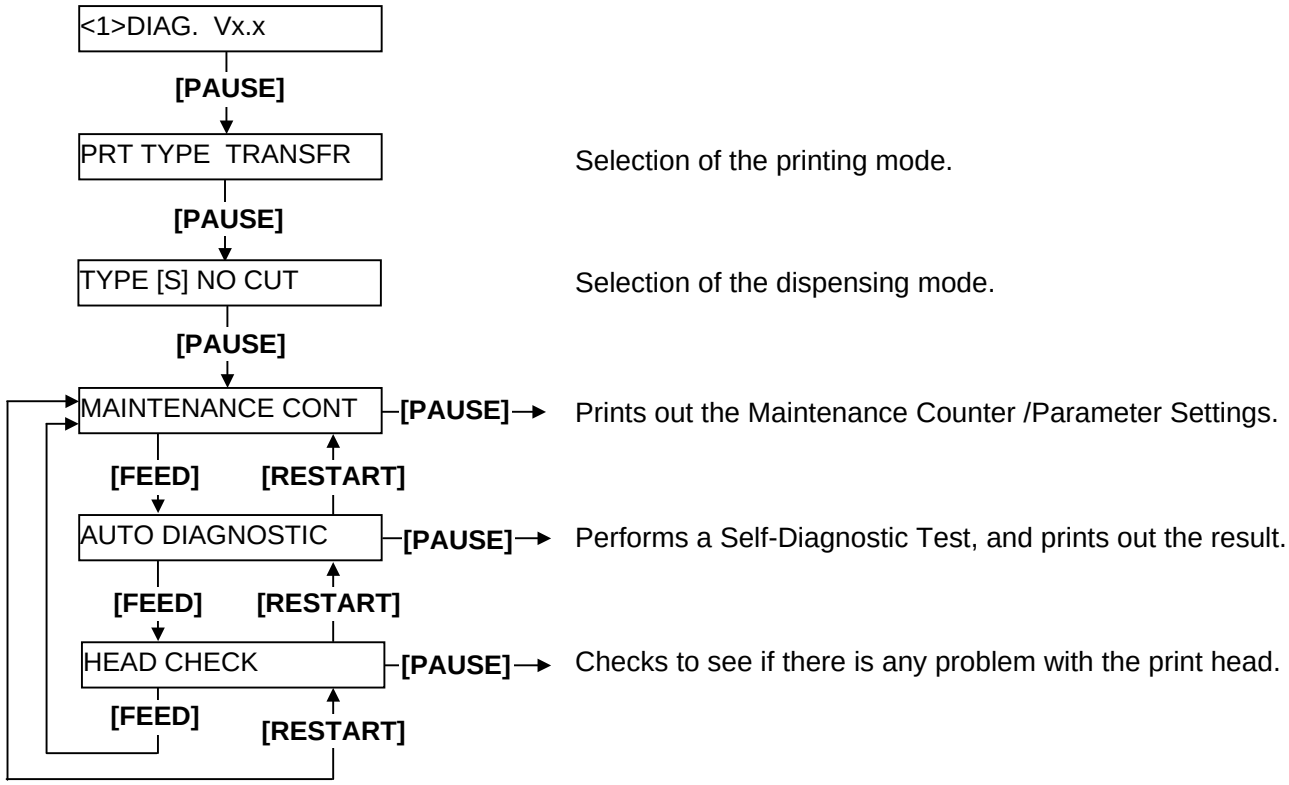
NOTES: *1. System Mode menu can be selected with the **[RESTART]** or **[FEED]** key.*
*2. Pressing the **[PAUSE]** key allows you to enter the sub menus of each System Mode menu. Flowcharts of each menu's sub menus are provided on the following pages.*
3. "x.x" of "DIAG. Vx.x" indicates firmware version and revision.

2.1 Self-diagnostic Test

■ Outline of Self-diagnostic Test

In the Self-diagnostic test mode, the printer automatically checks and prints out the printer system information such as the sensor status or interface, and the maintenance counter. Also it performs a print head broken element check.

The **Self-diagnostic test** contains the following sub menus:



NOTE: *Use the **[FEED]** or **[RESTART]** key to select a desired option.*

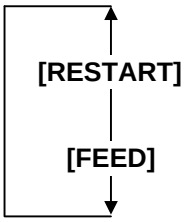
■ How to Enter Self-diagnostic Test Mode

Turn on the printer while pressing the **[FEED]** and **[PAUSE]** keys at the same time. Hold both keys until the "<1>DIAG. Vx.x" message appears in the display.

<1>DIAG. Vx.x

2.1.1 Printing Mode Selection

While “PRT TYPE TRANSFR” is displayed on the LCD, press the **[PAUSE]** key. The type of printing mode can be selected:
“TRANSFR” (Thermal transfer) or “DIRECT” (Thermal direct).
After selecting the printing mode to be used, press the **[PAUSE]** key.

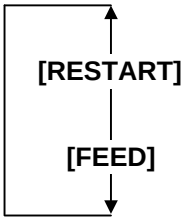


PRT TYPE TRANSFR	Thermal transfer: When ribbon is used.
PRT TYPE DIRECT	Thermal direct: When thermal paper is used.

NOTE: *When using the ribbon, be sure to select “Thermal Transfer”. When using the thermal media, be sure to select the “Thermal Direct”.*

2.1.2 Dispensing Mode Selection

When “TYPE [S] NO CUT” is displayed, press the **[PAUSE]** key. The type of dispensing mode can be selected:
“[S] NO CUT” (Batch issue) or “[C] WITH CUT” (Cut issue)
After selecting the dispensing mode to be used, press the **[PAUSE]** key.



TYPE [S] NO CUT	[S] NO CUT (Batch issue): To issue media in batch mode.
TYPE [C] WITH CUT	[C] WITH CUT (Cut issue): When an optional cutter module is installed.

NOTE: *When using the cutter module, be sure to select “[C] WITH CUT”. When the cutter module is not installed, be sure to select “[S] NO CUT”.*

2.1.3 Maintenance Counter/Parameter Settings Print Out

When “MAINTENANCE CONT” is displayed, the printer is ready to print out the Maintenance Counter/Parameter Settings. Press the **[PAUSE]** key to start.

- **Print Sample**

(1)	TOTAL FEED		1.1km	
(2)	FEED		1.1km	
(3)	PRINT		0.5km	
(4)	CUT		96	
(5)	RIBBON		3h	
(6)	232C ERR		255	
(7)	SYSTEM ERR		0	
(8)	POWER FAIL		0	
	[PC]		[KEY]	
(9)	FEED	+2.0mm	FEED	+0.0mm
(10)	CUT	+0.0mm	CUT	+1.0mm
(11)	BACK	+0.0mm	BACK	+0.0mm
(12)	TONE(T)	+0 step	TONE(T)	+0 step
(13)	TONE (D)	+0 step	TONE(D)	+0 step
(14)	RBN(FW)	-10	RBN (FW)	-8
(15)	RBN (BK)	+0	RBN (BK)	+0
(16)	X ADJ.	+0.0mm		
(17)	THRESHOLD (R)		1.0V	
(18)	THRESHOLD (T)		1.4V	
(19)	FONT		[PC-850] [0]	
(20)	SPEED		[9600]	
(21)	DATA LENG.		[8]	
(22)	STOP BIT		[1]	
(23)	PARITY		[EVEN]	
(24)	CONTROL		[XON+READY AUTO]	
(25)	MESSAGE		[ENGLISH]	
(26)	FORWARD WAIT		[ON] +0.0mm	
(27)	CODE		[AUTO]	
(28)	FEED KEY		[FEED]	
(29)	KANJI		[TYPE1]	
(30)	EURO CODE		[B0]	
(31)	AUTO HD CHK		[OFF]	
(32)	ACK/BUSY		[TYPE1]	
(33)	WEB PRINTER		[OFF]	
(34)	INPUT PRIME		[ON]	
(35)	EX. I/O MODE		[TYPE1]	
(36)	PLUG & PLAY		[OFF]	
(37)	LBL/RBN END		[TYPE1]	
(38)	MAXI CODE SPEC.		[TYPE1]	
(39)	AUTO CALIB.		[OFF]	
(40)	LAN		[ON SNMP ON]	
(41)	PRTR IP ADDRESS		[192.168.010.020]	
(42)	GATE IP ADDRESS		[000.000.000.000]	
(43)	SUBNET MASK		[255.255.255.000]	
(44)	MAC ADDRESS		[00-80-91-34-00-CC]	
(45)	TTF AREA		[1280KB]	
(46)	EXT CHR AREA		[256KB]	
(47)	BASIC AREA		[128KB]	
(48)	PC SAVE AREA		[128KB]	

(49)	SOCKET PORT	[OFF] [08000]
(50)	BASIC	[OFF]
(51)	BASIC TRACE	[OFF]
(52)	DHCP	[OFF]
(53)	DHCP ID	[FFFFFFFFFFFFFFFFFFFF] [FFFFFFFFFFFF]
(54)	DHCP HOST NAME	[ABCDEFGHIJKLMNOP]
(55)	RTC BATT. CHK	[ON]
(56)	RTC RENEWAL	[BATCH]

NOTE: *Print conditions:*
*Print speed: 4"/sec., Sensor: No sensor, Printing mode: Thermal transfer/Direct thermal(*1), Media length: 220 mm, Issue mode: Batch printing*
*(*1) Depends on the printing mode setting.*

• Descriptions of the Maintenance Counter

#	Item	Count Condition	Range
(1)	Total media distance covered	Counts when the feed motor is driven to feed, print or issue media. (Counted also during a reverse feed.) See ***NOTE 2***. Destination printed on the same line indicates one selected for a parameter clear.	0.0 to 3200.0 km
(2)	Media distance covered		0.0 to 3200.0 km
(3)	Print distance	Counts while printing. (Reverse feed is not counted.) See ***NOTE 3***.	0.0 to 200.0 km
(4)	Cut count	Counts every cut. See ***NOTE 4***.	0 to 1000000 times
(5)	Ribbon motor driving time	Counts when the ribbon motor is driven to feed, print or issue media. (The driving time is also counted during a reverse feed.) See ***NOTE 5***.	0 to 2000 hours
(6)	RS-232C hardware error count	Counts when a parity, overrun or framing error occurs. See ***NOTE 6***.	0 to 255 times
(7)	System error count	Counts when a system error occurs.	0 to 15 times
(8)	Momentary power failure count	Counts when a momentary power interruption occurs.	0 to 15 times

NOTES:
1. *Item from (2) through (8) are initialized to "0" after RAM clear.*
2. *If the media distance covered is 50.0 cm or less, it is rounded down and no data is added to the memory at power off.*
3. *If the print distance is 5.5 m or less, it is rounded down and no data is added to the memory at power off.*
4. *If the count is 31 or less, it is rounded down and no data is added to the memory at power off.*
5. *If the driving time is 27 sec. or less, it is rounded down and no data is added to the memory at power off.*
6. *When a sent command results in an error, the same number as the data capacity of the command is counted by byte.*

• Descriptions of the Parameters

Item	#	Description	Specification
FEED	(9)	Feed amount fine adjustment (PC), (KEY)	-50.0 mm to +50.0 mm
CUT	(10)	Cut position (stop position of the strip issue) fine adjustment (PC), (KEY)	-50.0 mm to +50.0 mm
BACK	(11)	Reverse feed amount fine adjustment (PC), (KEY)	-9.9 mm to +9.9 mm
TONE(T)	(12)	Print tone fine adjustment (Thermal transfer), (PC), (KEY)	-10 step to +10 step
TONE(D)	(13)	Print tone fine adjustment (Thermal direct), (PC), (KEY)	-10 step to +10 step
RBN(FW)	(14)	Ribbon take-up motor driving voltage fine adjustment (PC), (KEY)	-15 step to +6 step
RBN(BK)	(15)	Ribbon feed motor driving voltage fine adjustment (PC), (KEY)	-15 step to +10 step
X ADJ.	(16)	X coordinate fine adjustment	-99.9 mm to +99.9 mm
THRESHOLD<R>	(17)	Threshold manual fine adjustment for the black mark sensor	0.0V to 4.0V
THRESHOLD<T>	(18)	Threshold manual fine adjustment for the feed gap sensor	0.0V to 4.0V
FONT	(19)	Character code	PC-850 PC-851 PC-1252 LATIN9 PC-852 PC-855 PC-1253 Arabic PC-857 PC-1250 PC-1254 PC-8 PC-1251 PC-1257 PC-866 UTF-8
		Character “0”	0: without slash Ø: with slash
SPEED	(20)	Baud rate	2400: 2400 bps 19200: 19200 bps 4800: 4800 bps 38400: 38400 bps 9600: 9600 bps 115200: 115200 bps
DATA LENG.	(21)	Data length	7: 7 bits 8: 8 bits
STOP BIT	(22)	Stop bit length selection	1: 1 bit 2: 2 bits
PARITY	(23)	Parity	NON: None ODD: ODD EVEN: EVEN
CONTROL	(24)	Flow control code	XON/XOFF: XON/XOFF READY/BUSY: READY/BUSY (DTR) XON+READ AUTO: XON/XOFF+READY/BUSY (DTR) XON/XOFF AUTO: XON/XOFF READY/BUSY RTS: RTS
MESSAGE	(25)	Language selection for LCD message	ENGLISH: English GERMAN: German FRENCH: French DUTCH: Dutch SPANISH: Spanish JAPANESE: Japanese ITALIAN: Italian
FORWARD WAIT	(26)	Auto forward wait	ON: Available OFF: Unavailable ***NOTE:*** *The stop position fine adjustment value is also printed out.*
CODE	(27)	Control code selection	AUTO: Automatic selection ESC LF NUL: ESC LF NUL mode { | }: Mainframe mode xx xx xx: Optional code (The values are given in HEX.)
FEED KEY	(28)	Feed key function	FEED: Feeds one label PRINT: Prints image buffer on one label
KANJI	(29)	Kanji code type (Not supported by QM model)	TYPE 1: Windows code TYPE 2: Original code
EURO CODE	(30)	Euro font code	20H to FFH
AUTO HD CHK	(31)	Auto print head broken element check	ON: Available OFF: Unavailable

Item	#	Description	Specification
ACK/BUSY	(32)	Centronics interface ACK/BUSY timing setting	TYPE1: A rise of ACK signal and a release of BUSY occur at the same time. TYPE2: A fall of ACK signal and a release of BUSY occur at the same time.
WEB PRINTER	(33)	Web printer function	ON: Available OFF: Unavailable
INPUT PRIME	(34)	Input prime selection (Reset operation when $\overline{\text{INIT}}$ signal is ON)	ON: Available OFF: Unavailable
EX. I/O MODE	(35)	Expansion I/O interface operating mode	TYPE1: Standard mode TYPE2: Inline mode
PLUG&PLAY	(36)	Plug & Play setting	ON: Available OFF: Unavailable
LBL/RBN END	(37)	Print processing setting at the label/ribbon error detection	TYPE1: Printing is paused in the middle of printing. TYPE2: Printing is paused after the label is issued.
MAXI CODE SPEC.	(38)	MAXI code specification selection	TYPE1: Compatible with the current version TYPE2: Special specification
AUTO CALIB.	(39)	Automatic calibration	OFF: Disabled ON TRANS: Enabled with the transmissive sensor ON REFLECT: Enabled with the lower reflective sensor
LAN	(40)	Enabling or disabling the LAN	ON SNMP ON: LAN and SNMP are enabled. ON SNMP OFF: LAN is enabled, but SNMP is disabled. OFF: LAN is disabled.
PRTR IP ADDRESS	(41)	Printer IP address	***.***.***.***
GATE IP ADDRESS	(42)	Gateway IP address	***.***.***.***
SUBNET MASK	(43)	Subnet mask	***.***.***.***
MAC ADDRESS	(44)	MAC (Media Access Control) address for LAN controller on the MAIN PC Board	✶✶-✶✶-✶✶-✶✶-✶✶-✶✶
TTF AREA	(45)	True type font registration area size	0 KB to 3072 KB (unit of 128 KB)
EXT CHR AREA	(46)	External character registration area size	0 KB to 3072 KB (unit of 128 KB)
BASIC AREA	(47)	BASIC file store area size	0 KB to 1792 KB (unit of 128 KB)
PC SAVE	(48)	PC saving area size	0 KB to 3072 KB (unit of 128 KB)
SOCKET PORT	(49)	Socket port number	ON: Available OFF: Unavailable Port No. 0 to 65535
BASIC	(50)	BASIC interpreter setting	ON: Available OFF: Unavailable
BASIC TRACE	(51)	BASIC interpreter trace setting	ON: Available OFF: Unavailable
DHCP	(52)	DHCP function setting	ON: Available OFF: Unavailable
DHCP ID	(53)	DHCP ID setting	Max. 16 characters
DHCP HOST NAME	(54)	DHCP host name	Max. 16 characters
RTC BATT. CHK	(55)	RTC Low Battery Check setting	ON: Available OFF: Unavailable
RTC RENEWAL	(56)	RTC data renewal timing	BATCH: per batch PAGE: per page

2.1.4 Self-Diagnostic Test and Result Print Out

When the Maintenance Counter/Parameter Settings is printed, the message returns to "<1>DIAG. Vx.x". Press the **[PAUSE]** key twice.

The Self-Diagnostic Test is ready. Press the **[PAUSE]** key to start.

AUTO DIAGNOSTIC

The printer starts a self-diagnosis, and prints out the result. During printing, the message below appears on the display.

CHECKING & PRINT

After printing is completed, the display returns to "<1>DIAG. Vx.x".

NOTE: *If an error occurs, an error message appears, the printer stops printing. After clearing the error, press the **[PAUSE]** key to return the display to "<1>DIAG.Vx.x". The printer does not restart printing automatically.*

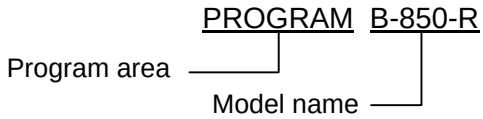
• Print Sample

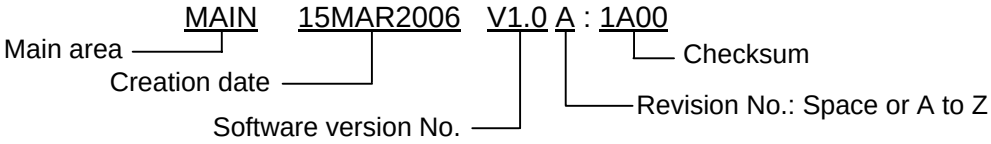
(1)	PROGRAM	B-850-R
	MAIN	15MAR2006 V1.0A: 1A00
	BOOT	20MAR2006 V1.0: 8500
(2)	FONT	AD00
(3)	KANJI	GOTHIC :9F00
		MINCHO :7400
(4)	EEPROM	OK
(5)	SDRAM	16MB
(6)	SENSOR1	00000000, 00000111
(7)	SENSOR2	[H]23°C [A]22°C
		[R(U)]4.2V [R(L)]4.0V
		[T]2.5V
(8)	PE LV.	[R(U)]1.2V [R(L)]1.3V
		[T]4.3V
(9)	M THRE.	[R]5.0V [T]5.0V
(10)	EXP.I/O	NG
(11)	EX.232C	NG
(12)	SIO	NG NG

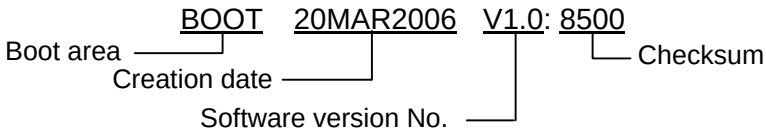
NOTES: *1. Print conditions: Print speed: 4"/sec., Sensor: No sensor, Printing method: Thermal transfer/Direct thermal(*1), Media length: 92 mm, Issue mode: Batch printing*
*(*1) Depends on the printing mode setting.*
2. Software version No., Part No. of ROM and checksum vary according to the software version of PROGRAM ROM.
3. The last two digits of the checksum are usually "00".
4. When Kanji ROM is not installed, the checksum becomes "0000".
5. The symbol "°" of "°C" may not be printed depending on the type of character code.

• Descriptions

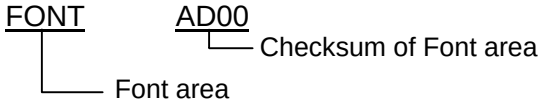
(1) Program ROM Check (Model Name, Date, Version, Part number, Checksum)



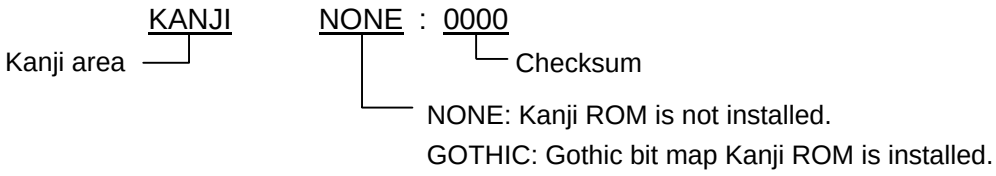


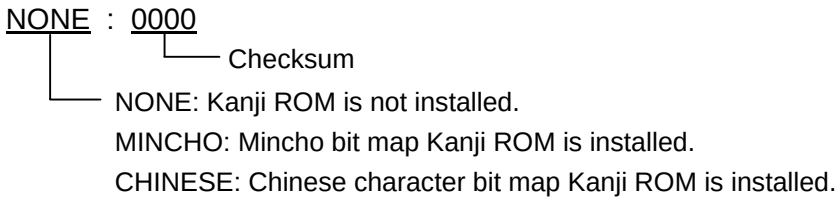


(2) Alphanumeric Font ROM Check

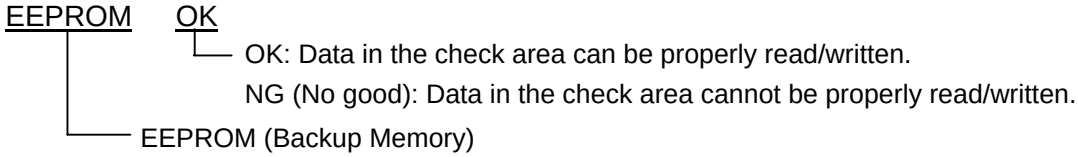


(3) Kanji ROM Check

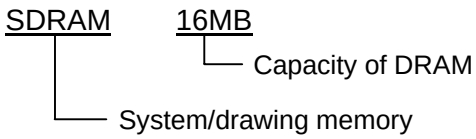



NONE : 0000
Checksum
NONE: Kanji ROM is not installed.
MINCHO: Mincho bit map Kanji ROM is installed.
CHINESE: Chinese character bit map Kanji ROM is installed.

(4) EEPROM Check

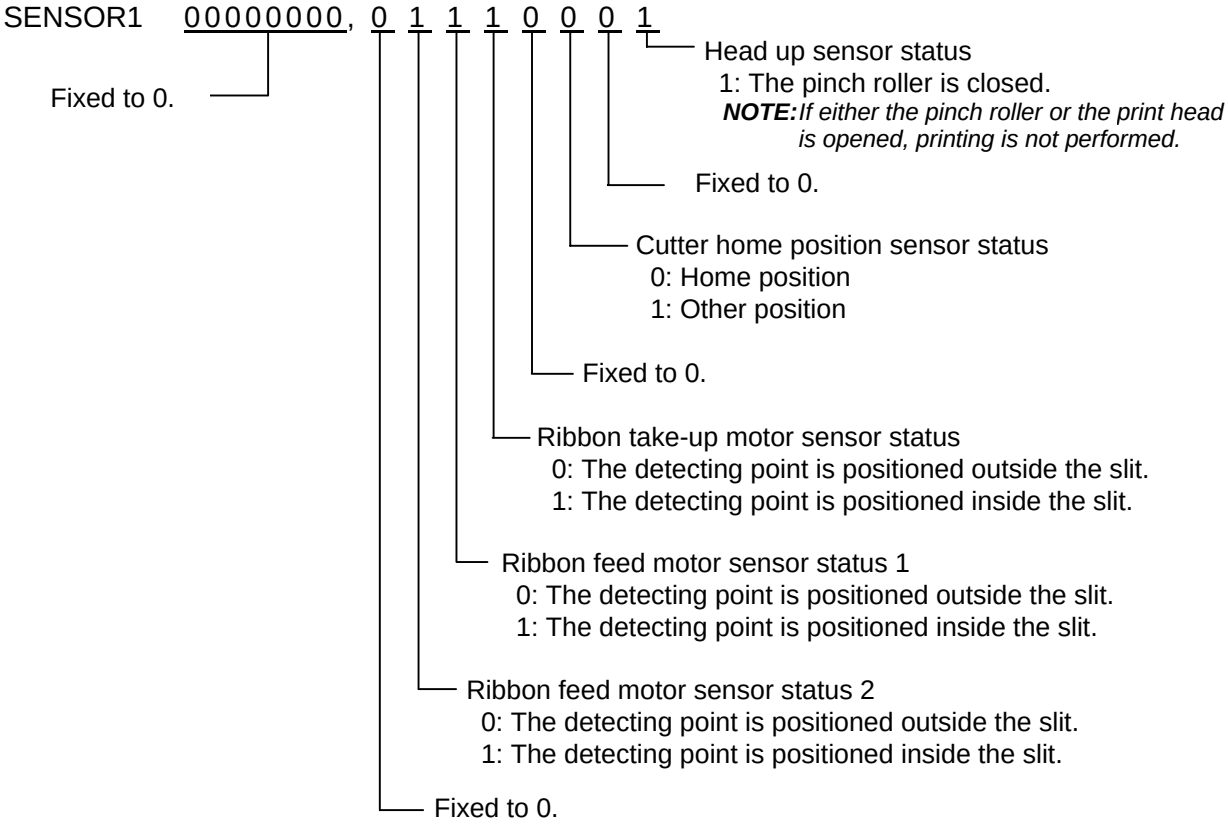

EEPROM OK
OK: Data in the check area can be properly read/written.
NG (No good): Data in the check area cannot be properly read/written.
EEPROM (Backup Memory)

(5) SDRAM Capacity



(6) Sensor 1 Check

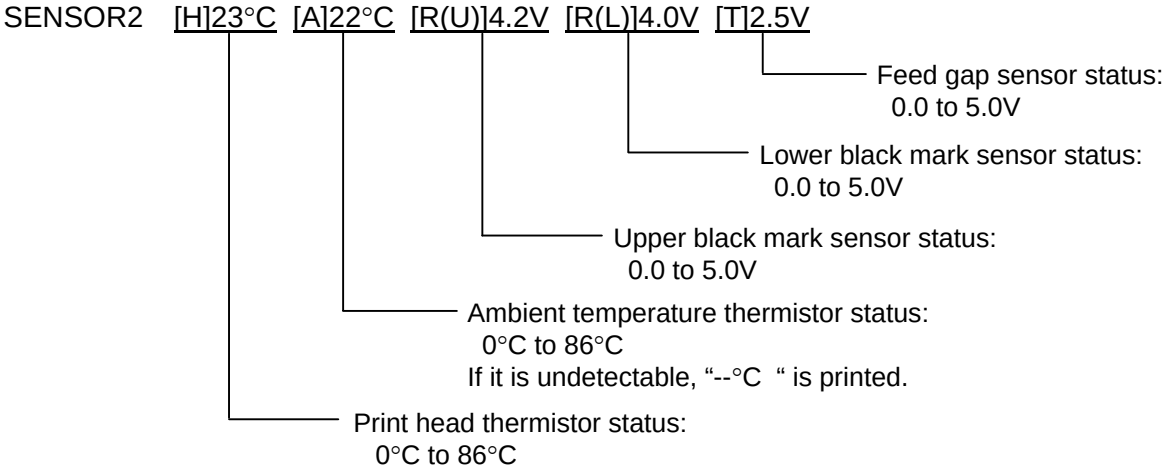
The status of the Ribbon Feed Motor Sensor, Ribbon Take-up Motor Sensor, Cutter Home Position Switch, and Head Up Sensor are printed.


SENSOR1 00000000, 0 1 1 1 0 0 0 1
Fixed to 0.
Head up sensor status
1: The pinch roller is closed.
NOTE: If either the pinch roller or the print head is opened, printing is not performed.
Fixed to 0.
Cutter home position sensor status
0: Home position
1: Other position
Fixed to 0.
Ribbon take-up motor sensor status
0: The detecting point is positioned outside the slit.
1: The detecting point is positioned inside the slit.
Ribbon feed motor sensor status 1
0: The detecting point is positioned outside the slit.
1: The detecting point is positioned inside the slit.
Ribbon feed motor sensor status 2
0: The detecting point is positioned outside the slit.
1: The detecting point is positioned inside the slit.
Fixed to 0.

Sensor/Switch	Print status description
Head up sensor	Detects the Open or Close status of the print head.
Cutter home position sensor	Indicates whether or not the cutter is at the home position.
Ribbon take-up motor sensor Ribbon feed motor sensor	Controls ribbon motor rotation by detecting the slit on the ribbon take-up motor and the ribbon feed motor. Indicates the position of the slit sensor.

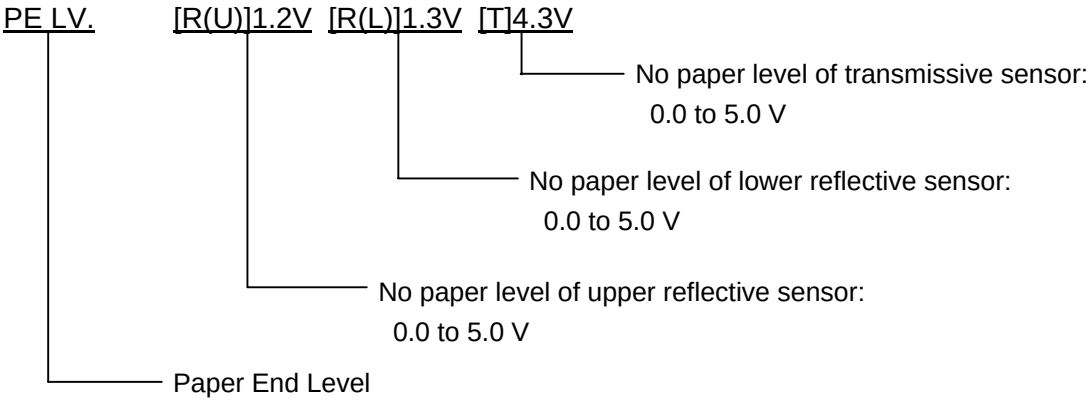
(7) Sensor 2 Check

The status of the Print Head Thermistor, Ambient Temperature Thermistor, Black Mark Sensor, and Feed Gap Sensor are printed.


SENSOR2 [H]23°C [A]22°C [R(U)]4.2V [R(L)]4.0V [T]2.5V
Feed gap sensor status:
0.0 to 5.0V
Lower black mark sensor status:
0.0 to 5.0V
Upper black mark sensor status:
0.0 to 5.0V
Ambient temperature thermistor status:
0°C to 86°C
If it is undetectable, "--°C " is printed.
Print head thermistor status:
0°C to 86°C

Sensor/Thermistor	Print status description
Print head thermistor	A thermistor built in the print head detects a print head temperature. The current supplied to the print head (= print tone) is controlled on the basis of this temperature. When the print head overheats (80°C or over), the printer displays "EXCESS HEAT TEMP" message and stops printing to protect the print head.
Ambient temperature thermistor	Temperature inside the printer (around the media) is detected. The current supplied to the print head (= print tone) is controlled on the basis of this temperature. When the temperature of 61°C is detected, an error message, "EXCESS HEAT TEMP", is displayed and the printer stops.
Upper black mark sensor/ Lower black mark sensor	Real time voltage detected by the upper black mark sensor or lower black mark sensor is displayed/printed.
Feed gap sensor	Real time voltage detected by the feed gap sensor is displayed/printed.

(8) Paper End Level Check


PE LV. [R(U)]1.2V [R(L)]1.3V [T]4.3V
No paper level of transmissive sensor:
0.0 to 5.0 V
No paper level of lower reflective sensor:
0.0 to 5.0 V
No paper level of upper reflective sensor:
0.0 to 5.0 V
Paper End Level

(9) Manual Threshold Check

M THRE. [R]5.0V [T]5.0V

- [T]5.0V: Manually set threshold level of transmissive sensor: 0.0 to 5.0 V
- [R]5.0V: Manually set threshold level of lower reflective sensor: 0.0 to 5.0 V
- M THRE.: Manual Threshold Check

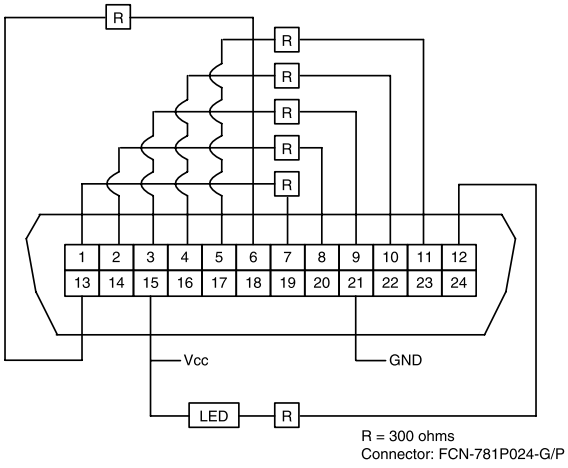
(10) Expansion I/O Interface Check

Result of a loop back check performed on an expansion I/O interface, which may connect to an external equipment like a labeller, is printed.

EXP.I/O OK

- OK: Loopback test
  - OK: The circuit has no problem.
  - NG (Not good): The circuit has a problem or loopback jig is not attached.
- EXP.I/O: Expansion I/O PC board

Connect the jig like below to the Expansion I/O PC board's connector and perform a loop back check.

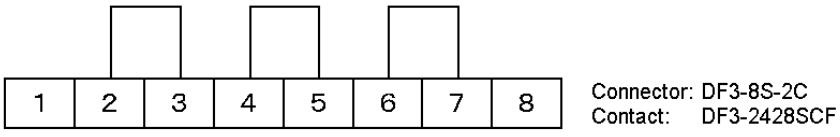


(11) Internal Serial Interface Check

EX.232C NG

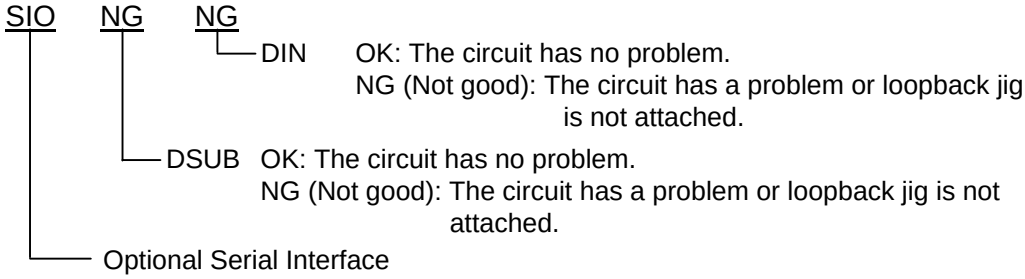
- NG: OK: The circuit has no problem.
  NG (Not good): The circuit has a problem or loopback jig is not attached.
- EX.232C: Internal Serial Interface

Connect the jig like below to the serial interface connector and perform a loop back check.



(12) SIO Interface check

Result of optional serial interface check is printed.


SIO
NG
NG
DIN
OK: The circuit has no problem.
NG (Not good): The circuit has a problem or loopback jig is not attached.
DSUB
OK: The circuit has no problem.
NG (Not good): The circuit has a problem or loopback jig is not attached.
Optional Serial Interface

2.1.5 Print Head Element Check

This function is used to check for any broken thermal elements of the print head.
If blurred print or missing dots occurs, this check helps you find whether the thermal elements are actually broken or the print head is just stained.
Also, use this check just after a replacement of a print head to find an initial failure.

When the Self-Diagnostic Test result is printed, the message returns to "<1>DIAG. Vx.x". Press the **[PAUSE]** key three times and **[FEED]** key twice.

The printer is ready to check the print head to see if there is any problem with the print head. Press the **[PAUSE]** key to start.

HEAD CHECK	**[PAUSE]** →	CHECKING

If there is no problem with the print head, the print head check is complete. Press the **[PAUSE]** key to return to "<1>DIAG. Vx.x".

NORMAL END

If there is a problem with the print head, the following message is displayed.

HEAD ERROR

Press the **[PAUSE]** key to return to "<1>DIAG. Vx.x".

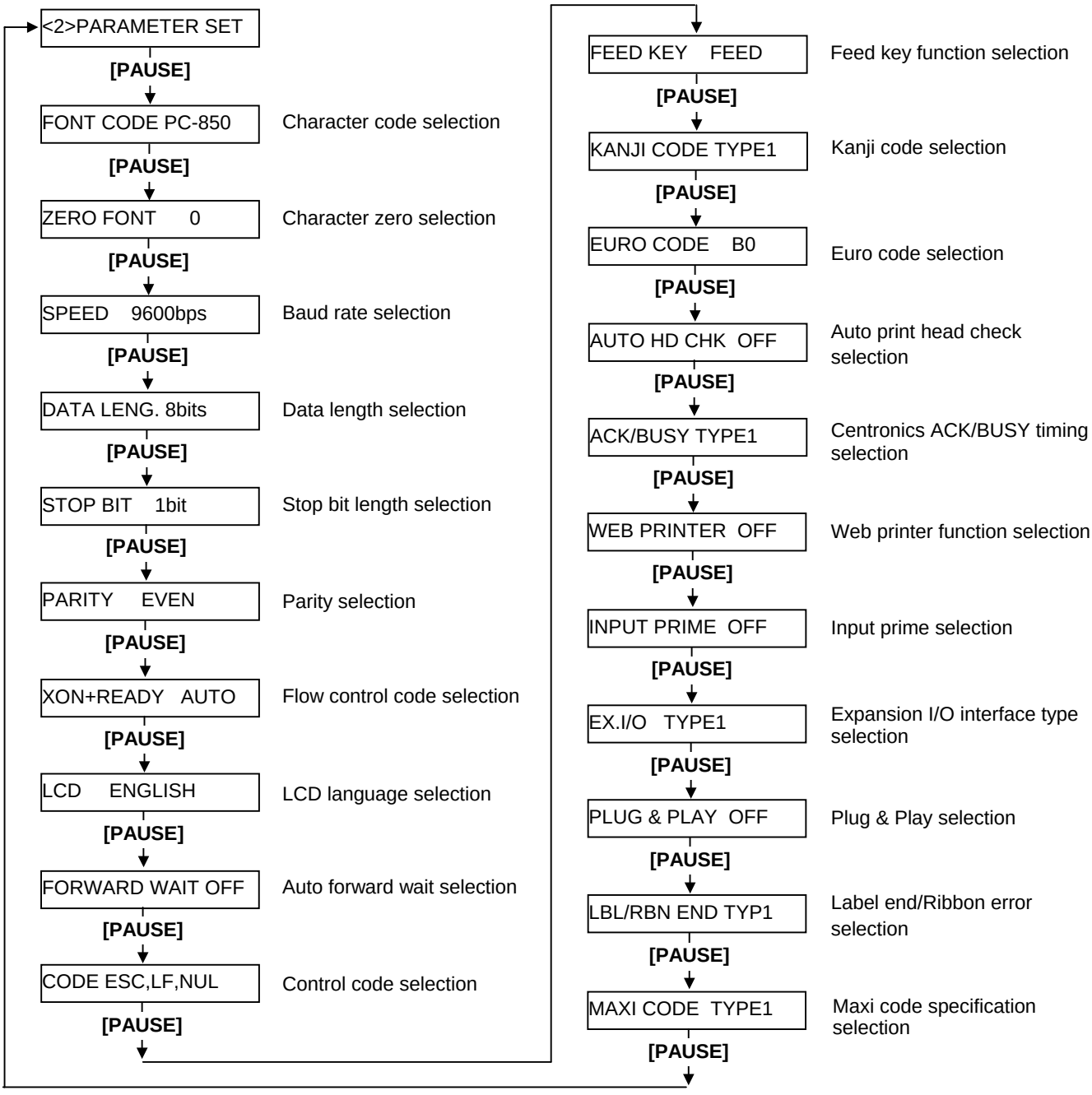
NOTES: *1. Make sure that the Top Cover is closed before starting the print head check.*
2. If "HEAD ERROR" appears, the print head element may be damaged. Replace the print head.
3. The print head element check can be performed at the power on time.
*For selecting this function, refer to **Section 2.2 Parameter Setting**.*

2.2 Parameter Setting

■ Outline of Parameter Setting

In the Parameter Setting mode, various kinds of parameters, such as communication, key, LCD, etc. can be set. This will allow a use of the printer to comply with your operating conditions.

The **Parameter Setting** menu contains the following:



NOTE: *Baud rate, Data length, Parity, and Transmission control code should be set to the same values as those of the host computer. Failure to do this causes improper operation.*

■ How to Enter Parameter Setting Mode

Turn on the printer while pressing the **[FEED]** and the **[PAUSE]** keys at the same time. Hold both keys until the "<1>DIAG. Vx.x" message appears.

<1>DIAG. Vx.x

Press the **[FEED]** key. The printer is at the start of the Parameter Setting menu.

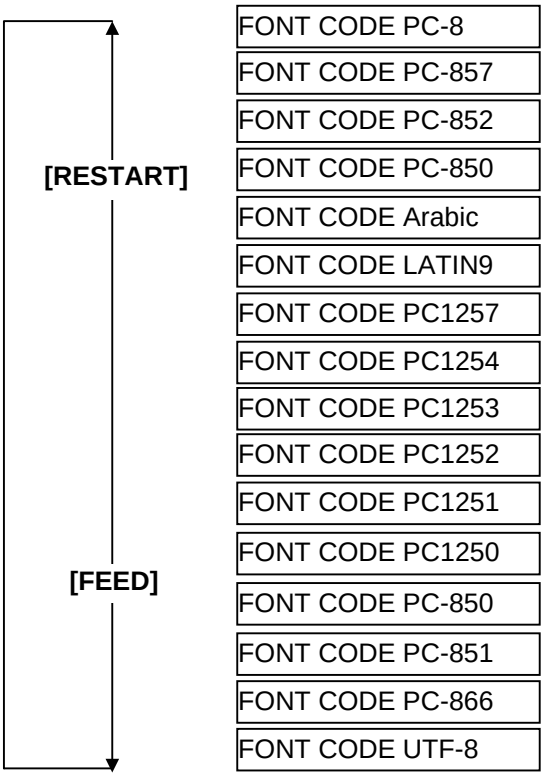
<2>PARAMETER SET

2.2.1 Character Code Selection

This parameter is to choose a character code used for printing. Printed characters differ depending on a chosen character code and font. For details of characters, refer to the **B-852-TS22-QQ/QP-R External Equipment Interface Specification** (Printer Command Manual).
When "<2>PARAMETER SET" appears, press the **[PAUSE]** key.

FONT CODE PC-850

Use the **[FEED]** or **[RESTART]** key to select a desired option.



After selecting a character code, press the **[PAUSE]** key.

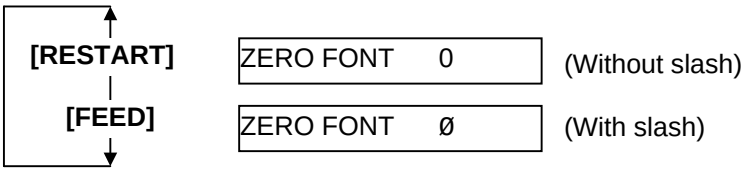
NOTES: *1. When pressing the **[FEED]** and **[RESTART]** keys at the same time in the parameter setting, the message returns to "<2>PARAMETER SET".*
*2. If holding the **[FEED]** or **[RESTART]** key for 0.5 seconds or longer in the parameter setting the key is entered continuously.*
*3. A changed parameter becomes effective by pressing the **[PAUSE]**.*

2.2.2 Character Zero Selection

This parameter is to choose the way to indicate zero between "0" and "Ø".
When "<2>PARAMETER SET" appears, press the **[PAUSE]** key twice.

ZERO FONT 0

Use the **[FEED]** or **[RESTART]** key to select a desired option.



After selecting a character zero, press the **[PAUSE]** key.

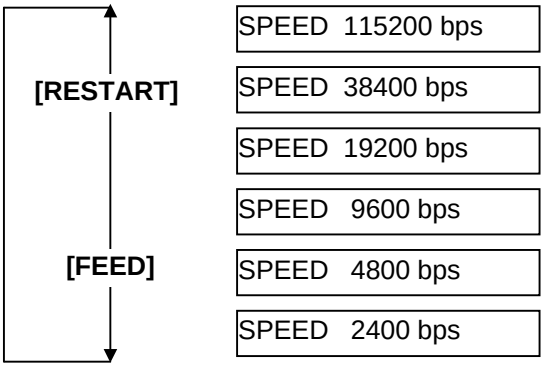
NOTE: *The following fonts do not support a zero with slash.*
Bit Map Font: OCR-A, OCR-B, GOTHIC 725 Black, Kanji, Chinese
Outline Font: Price Font 1, Price Font 2, Price Font 3, DUTCH 801 Bold, BRUSH 738 Regular, GOTHIC 725 Black, True Type Font

2.2.3 Baud Rate Selection

This parameter is to choose a baud rate of the RS-232C interface. When the printer communicates with a host computer by serial interface, be sure to match the setting with the host.
When "<2>PARAMETER SET" appears, press the **[PAUSE]** key until the following display appears.

SPEED 9600bps

Use the **[FEED]** or **[RESTART]** key to select a desired option.



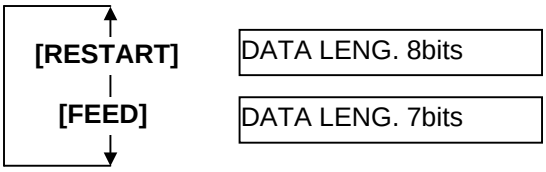
After selecting a baud rate, press the **[PAUSE]** key.

2.2.4 Data Length Selection

This parameter is to choose a communication data length of the RS-232C interface.
7 bits is used when transmitting alphanumeric data only. 8 bits is used to when transmitting special characters. Be sure to match a setting with a host computer.
When "<2>PARAMETER SET" appears, press the **[PAUSE]** key until the following display appears.

DATA LENG. 8bits

Use the **[FEED]** or **[RESTART]** key to select a desired option.



After selecting a data length, press the **[PAUSE]** key.

2.2.5 Stop Bit Length Selection

This parameter is to choose a stop bit length of the RS-232C interface.
Be sure to match a setting with a host computer.
When "<2>PARAMETER SET" appears, press the **[PAUSE]** key until the following display appears.

STOP BIT 1bit

Use the **[FEED]** or **[RESTART]** key to select a desired option.

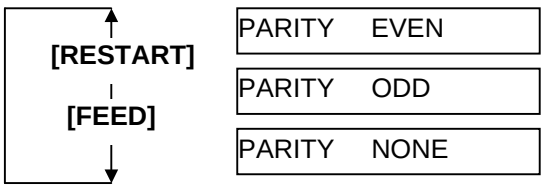
After selecting a stop bit, press the **[PAUSE]** key.

2.2.6 Parity Selection

This parameter is to choose the parity of the RS-232C interface.
When "<2>PARAMETER SET" appears, press the **[PAUSE]** key until the following display appears.

PARITY NONE

Use the **[FEED]** or **[RESTART]** key to select a desired option.



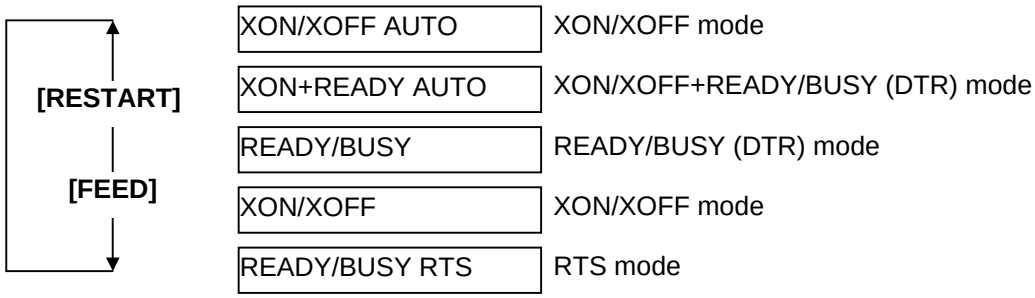
After selecting the parity, press the **[PAUSE]** key.

2.2.7 Flow Control Code Selection

This parameter is to choose a flow control code of the RS-232C interface.
When "<2>PARAMETER SET" appears, press the **[PAUSE]** key until the following display appears.

XON+READY AUTO

Use the **[FEED]** or **[RESTART]** key to select a desired option.



After selecting a flow control code, press the **[PAUSE]** key.

NOTE: *The following is the detailed descriptions for each transmission control code.*

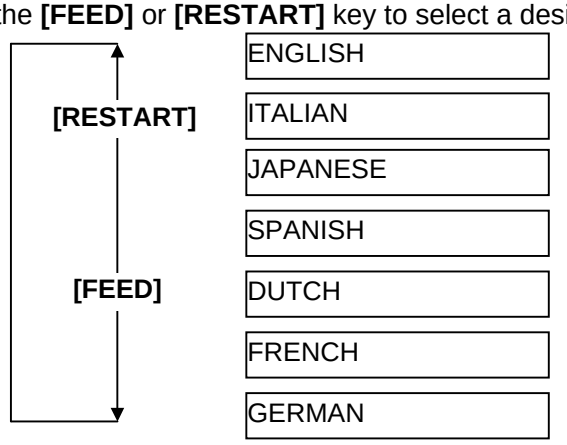
1) *XON/XOFF AUTO*
   At the power on time, the printer outputs XON. At the power off time, the printer outputs XOFF.
2) *XON+READY AUTO*
   At the power on time, the printer outputs XON. At the power off time, the printer outputs XOFF.
3) *READY/BUSY*
   At the power on time, the DTR signal output from the printer turns to High level (READY). At the power off time, the printer does not output XOFF.
4) *ON/XOFF*
   At the power on time, the printer outputs XON. At the power off time, the printer does not output XOFF.
5) *READY/BUSY RTS*
   At the power on time, the RTS signal output from the printer turns to High level (READY). At the power off time, the printer does not output XOFF.

2.2.8 LCD Language Selection

This parameter is to choose a language in which the LCD message is displayed.
When "<2>PARAMETER SET" appears, press the **[PAUSE]** key until the following display appears.

LCD ENGLISH

Use the **[FEED]** or **[RESTART]** key to select a desired option.



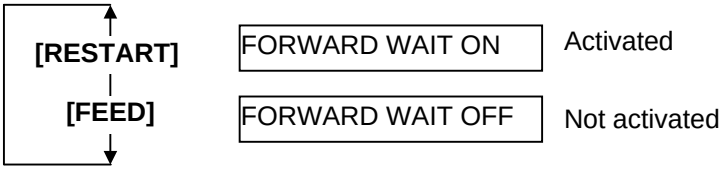
After selecting a language, press the **[PAUSE]** key.

2.2.9 Auto Forward Wait Selection

This parameter is to choose whether to activate the Auto Forward Wait function or not.
This function, used in the cut mode, automatically feeds the media forward for about 19 mm if there is more than 1-second idle time after printing, to prevent the top edge of the media from curling.
When "<2>PARAMETER SET" appears, press the **[PAUSE]** key until the following display appears.

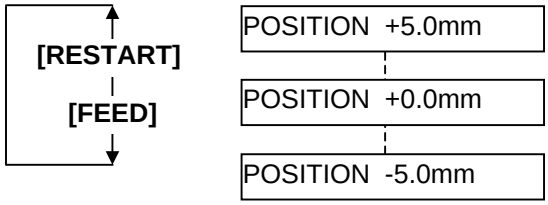
FORWARD WAIT OFF

Use the **[FEED]** or **[RESTART]** key to select a desired option.



When ON is selected, pressing the **[PAUSE]** key will result that the LCD Message Display shows the stop position fine adjustment value setting screen.

POSITION +0.0mm



[FEED] key: Pressing the **[FEED]** key one time causes a –0.1 mm change, up to –5.0 mm.
[RESTART] key: Pressing the **[RESTART]** key one time causes a +0.1 mm change, up to +5.0 mm.

After selecting an auto forward wait, press the **[PAUSE]** key.

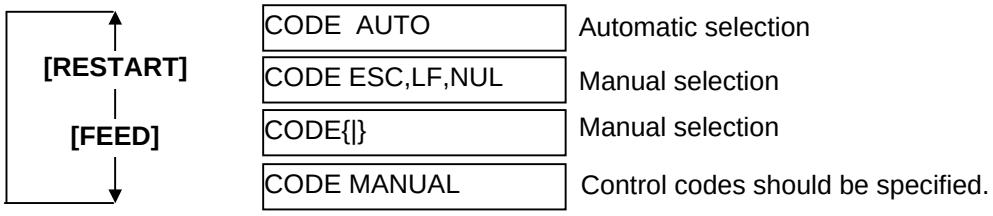
NOTES: *1. If the printer is not used for a few days, the top edge of the media may become curly, which may cause a paper jam. The Auto Forward Wait Function prevents this problem since the media feed amount is increased so that the media stops past the platen.*
2. When the Stop Position Fine Adjustment Value is set in + direction, the media will stop past the media outlet.
When the value is set in – direction, the media will stop inside the media outlet.
3. This setting will be useful to fine adjust the cut position of labels.

2.2.10 Control Code Selection

This parameter is to choose a Control Code.
When "<2>PARAMETER SET" appears, press the **[PAUSE]** key until the following display appears.

```
CODE  AUTO
```

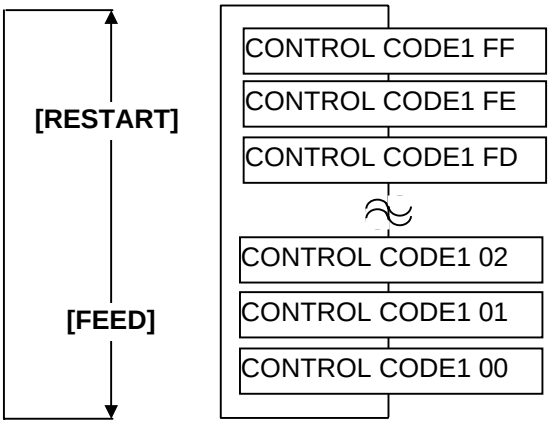
Use the **[FEED]** or **[RESTART]** key to select a desired option.



NOTES: *1. This parameter is used to select the Control Code for the communication between the printer and the host computer.*
2. Selecting "Manual" enables you to set the control code.

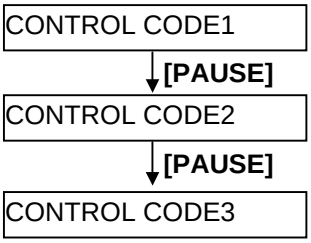
When "CODE MANUAL" is selected and the **[PAUSE]** key is pressed, the LCD display will show the setting screen of CONTROL CODE1 to CONTROL CODE3 as follows.

```
CONTROL CODE1 1B
```



NOTES: *1. Pressing the **[FEED]** or **[RESTART]** key causes 1-byte change in the Control Code value.*
2. You cannot specify the same control code with the one used for the commands.
3. You cannot use the specified Control Code for the data of the Data Command or Display Command.

After setting the control code for Control Code 1, press the **[PAUSE]** key to show the CONTROL CODE2 screen. In a same manner, press the **[PAUSE]** key after setting the control code for Control Code 2 to display the CONTROL CODE3 screen.



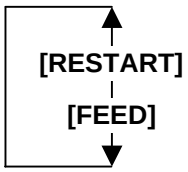
Press the **[PAUSE]** key after setting the control code for Control Code 3.

2.2.11 FEED Key Function Selection

This parameter is to choose the function of the **[FEED]** key.
When "<2>PARAMETER SET" appears, press the **[PAUSE]** key until the following display appears.

```
FEED KEY   FEED
```

Use the **[FEED]** or **[RESTART]** key to select a desired option.



FEED KEY FEED	The **[FEED]** key will feed one media when pressed.
FEED KEY PRINT	The **[FEED]** key will print the data in the Image Buffer (The last printed data)

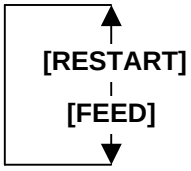
After selecting the FEED key function, press the **[PAUSE]** key.

2.2.12 KANJI Code Selection

This parameter is to choose a KANJI code.
When "<2>PARAMETER SET" appears, press the **[PAUSE]** key until the following display appears.

```
KANJI CODE TYPE1
```

Use the **[FEED]** or **[RESTART]** key to select a desired option.



KANJI CODE TYPE1	Windows code
KANJI CODE TYPE2	Original code

NOTE: *Kanji code selection is not supported by the QQ/QP model as the Kanji ROMs are not installed.*

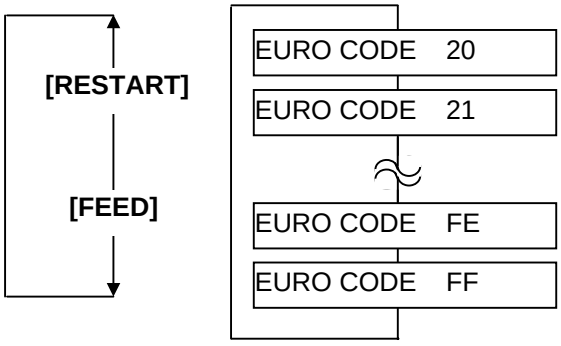
After selecting a Kanji code, press the **[PAUSE]** key.

2.2.13 EURO Code Selection

This parameter is to choose a Euro code (€).
When "<2>PARAMETER SET" appears, press the **[PAUSE]** key until the following display appears.

```
EURO CODE   B0
```

Use the **[FEED]** or **[RESTART]** key to select a desired option.



NOTE: *Pressing the **[FEED]** or **[RESTART]** key causes 1 byte change in the Euro Code value.*

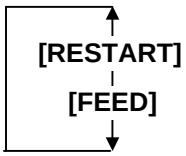
After selecting a Euro code, press the **[PAUSE]** key.

2.2.14 Auto Print Head Check Selection

This parameter is to choose whether to perform the Auto Print Head Check function at the power on time. When "<2>PARAMETER SET" appears, press the **[PAUSE]** key until the following display appears.

AUTO HD CHK OFF

Use the **[FEED]** or **[RESTART]** key to select a desired option.



AUTO HD CHK OFF	Auto print head broken element check is not performed.
AUTO HD CHK ON	Auto print head broken element check is performed.

NOTES: *1. It will take about 2 seconds to perform an Auto Print Head check.*
2. It is recommended that this function should be activated when high quality printing such as bar codes printing is required. Otherwise, choose OFF.
*3. When a broken element is found, the printer stops, displaying "HEAD ERROR". The error state can be cleared by pressing the **[RESTART]** key, but if the broken element affects bar code readability or actual operations, please replace the print head with a proper one.*

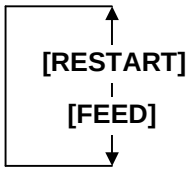
After selecting auto print head check, press the **[PAUSE]** key.

2.2.15 Centronics Interface ACK/BUSY Timing Selection

This parameter is to choose an ACK/BUSY timing of the Centronics interface.
"TYPE1" has been chosen as default, but if a communication error occurs or a communication is not properly made, change to "TYPE2".
When "<2>PARAMETER SET" appears, press the **[PAUSE]** key until the following display appears.

ACK/BUSY TYPE1

Use the **[FEED]** or **[RESTART]** key to select a desired option.



ACK/BUSY TYPE1	A rise of ACK signal and a release of BUSY occur at the same time.
ACK/BUSY TYPE2	A fall of ACK signal and a release of BUSY occur at the same time.

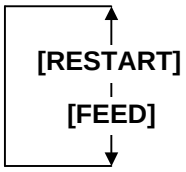
After selecting an ACK/BUSY timing, press the **[PAUSE]** key.

2.2.16 Web Printer Function Selection

This parameter is to choose whether to use the printer as a web printer.
When "<2>PARAMETER SET" appears, press the **[PAUSE]** key until the following display appears.

```
WEB PRINTER  OFF
```

Use the **[FEED]** or **[RESTART]** key to select a desired option.



WEB PRINTER OFF	Unavailable
WEB PRINTER ON	Available

After selecting the Web printer function, press the **[PAUSE]** key.

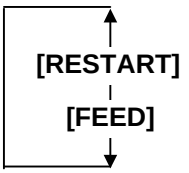
NOTE: *When "WEB PRINTER ON" is selected, the status of the printer connected in a network can be checked through the Web browser.*

2.2.17 Input Prime Selection

This parameter is to choose whether to enable a reset operation when $\overline{\text{INIT}}$ signal is ON.
Normally, when the printer receives a reset request signal (nInit signal) from the host via Centronics interface, the printer will be reset and turn to the idle state.
When the INPUT PRIME parameter is set to OFF, the printer is reset but does not turn to idle. When this parameter is set to ON, the host sends an $\overline{\text{INIT}}$ signal and the printer turns to idle each time the printer is turned on. If you would like to avoid this processing, set this parameter to OFF.
When "<2>PARAMETER SET" appears, press the **[PAUSE]** key until the following display appears.

```
INPUT PRIME  OFF
```

Use the **[FEED]** or **[RESTART]** key to select a desired option.



INPUT PRIME ON	Available
INPUT PRIME OFF	Unavailable

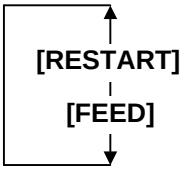
After selecting the Input Prime, press the **[PAUSE]** key.

2.2.18 Expansion I/O Interface Type Selection

This parameter is to choose a type of the Expansion I/O interface operating mode.
This parameter should be set depending on the expansion I/O control specification of the device to be connected via the expansion I/O interface. For details, refer to the **External Equipment Interface Specification**.
When "<2>PARAMETER SET" appears, press the **[PAUSE]** key until the following display appears.

EX.I/O TYPE1

Use the **[FEED]** or **[RESTART]** key to select a desired option.



EX.I/O TYPE1	TYPE1: Standard mode
EX.I/O TYPE2	TYPE2: Inline mode

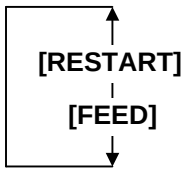
After selecting an Expansion I/O Interface type, press the **[PAUSE]** key.

2.2.19 Plug & Play Selection

This parameter is to choose whether to enable a Plug & Play function.
When "<2>PARAMETER SET" appears, press the **[PAUSE]** key until the following display appears.

PLUG & PLAY OFF

Use the **[FEED]** or **[RESTART]** key to select a desired option.



PLUG & PLAY OFF	Unavailable
PLUG & PLAY ON	Available

NOTE: *If the printer and the PC are connected by USB, plug & play will be automatically enabled, regardless of the setting of this parameter.*

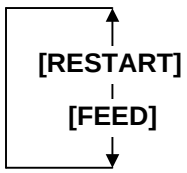
After selecting a Plug & Play, press the **[PAUSE]** key.

2.2.20 Label End/Ribbon Error Selection

This parameter is to choose a printing process when a label end or ribbon error is detected. For details, refer to NOTE on the following page.
When "<2>PARAMETER SET" appears, press the **[PAUSE]** key until the following display appears.

LBL/RBN END TYP1

Use the **[FEED]** or **[RESTART]** key to select a desired option.



LBL/RBN END TYP1	TYPE1: When a label end or ribbon error is detected in the middle of printing, printing is immediately paused.
LBL/RBN END TYP2	TYPE2: When a label end or ribbon error is detected in the middle of printing, the printer prints the half-finished label as far as possible, and stops when the next label is at the home position.

After selecting a Label End/Ribbon Error type, press the **[PAUSE]** key.

NOTE: *Difference between TYPE 1 and TYPE 2*

TYPE1:

When a label end or ribbon error is detected, printing is immediately stopped. When the printing is restarted, first the initial feed is performed, and then the printer starts printing from the unfinished label.

TYPE2:

When a label end is detected:

When a label end is detected in the middle of printing, the printer completes the half-finished label and stops when the next label comes to the home position, displaying the error message "NO PAPER X".

NOTES: 1. *"X" indicates the number of remaining labels to be printed.*
The number of remaining labels to be printed = Specified number of labels − The number of finished labels including the label that caused the error
2. *If a label end is detected while the specified last label is printed, the position of "X" will be blank. When the printing is restarted, first an initial feed is performed, and then the printer starts printing from the next label. When the printer has already completed printing the last label, it only performs an initial feed. Then, it sends an End of Feed status and an End of Issue status if the status response parameter is set to ON.*

Example) Number of specified labels = 5, A label end is detected while the 3rd label is printed.
(1) After the 3rd label is printed completely, the printer stops, displaying "NO PAPER 2".
(2) When printing is restarted, first an initial feed is performed, then the 4th and 5th labels are printed.
(3) All of 5 labels have been finished.

When a ribbon error is detected when the unfinished label length is 30 mm or more.

After printing for 20mm, the printer stops printing, displaying an error message "RIBBON ERROR X".

NOTES: 1. *"X" indicates the number of remaining labels to be printed.*
The number of remaining labels to be printed = Specified number of labels − The number of finished labels − 1
2. *If a ribbon error is detected while the specified last label is printed, the position of "X" will be blank. When the printing is restarted, first an initial feed is performed, and then the printer starts printing from the next label. When the printer has already completed printing the last label, it only performs an initial feed.*

Example) Specified number of labels = 5, A ribbon error is detected while the 3rd label is printed.
(1) After the 3rd label is printed for 20 mm, the printer stops, displaying "RIBBON ERROR 2".
(2) When printing is restarted, first an initial feed is performed, then the 4th and 5th labels are printed.
(3) Only the 3rd label has not been printed completely.

When a ribbon error is detected when the unfinished label length is less than 30 mm.

The printer completes the current label and stops printing when the next label comes to the home position, displaying the error message "RIBBON ERROR X".

NOTES: 1. *"X" indicates the number of remaining labels to be printed.*
The number of remaining labels to be printed = Specified number of labels − The number of finished labels including the label that caused the error
2. *If a ribbon error is detected while the specified last label is printed, the position of "X" will be blank. When the printing is restarted, first the initial feed is performed, and then the printer starts printing from the next label. When the printer has already completed printing the last label, it only performs an initial feed. Then, it sends an End of Feed status and an End of Issue status if the status response parameter is set to ON.*

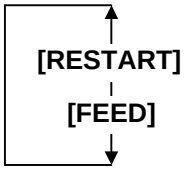
Example) Specified number of labels = 5, A ribbon end is detected while the 3rd label is printed.
(1) After the 3rd label is printed completely, the printer stops, displaying "RIBBON ERROR 2".
(2) When printing is restarted, first an initial feed is performed, then the 4th and 5th labels are printed.
(3) All of 5 labels have been finished.

2.2.21 Maxi Code Specification Selection

This parameter is to choose a Maxi code specification.
When “<2>PARAMETER SET” appears, press the **[PAUSE]** key until the following display appears.

MAXI CODE TYPE1

Use the **[FEED]** or **[RESTART]** key to select a desired option.



MAXI CODE TYPE1	TYEP1: Compatible specification with the existing version
MAXI CODE TYPE2	TYPE2: Specification for specific home delivery company

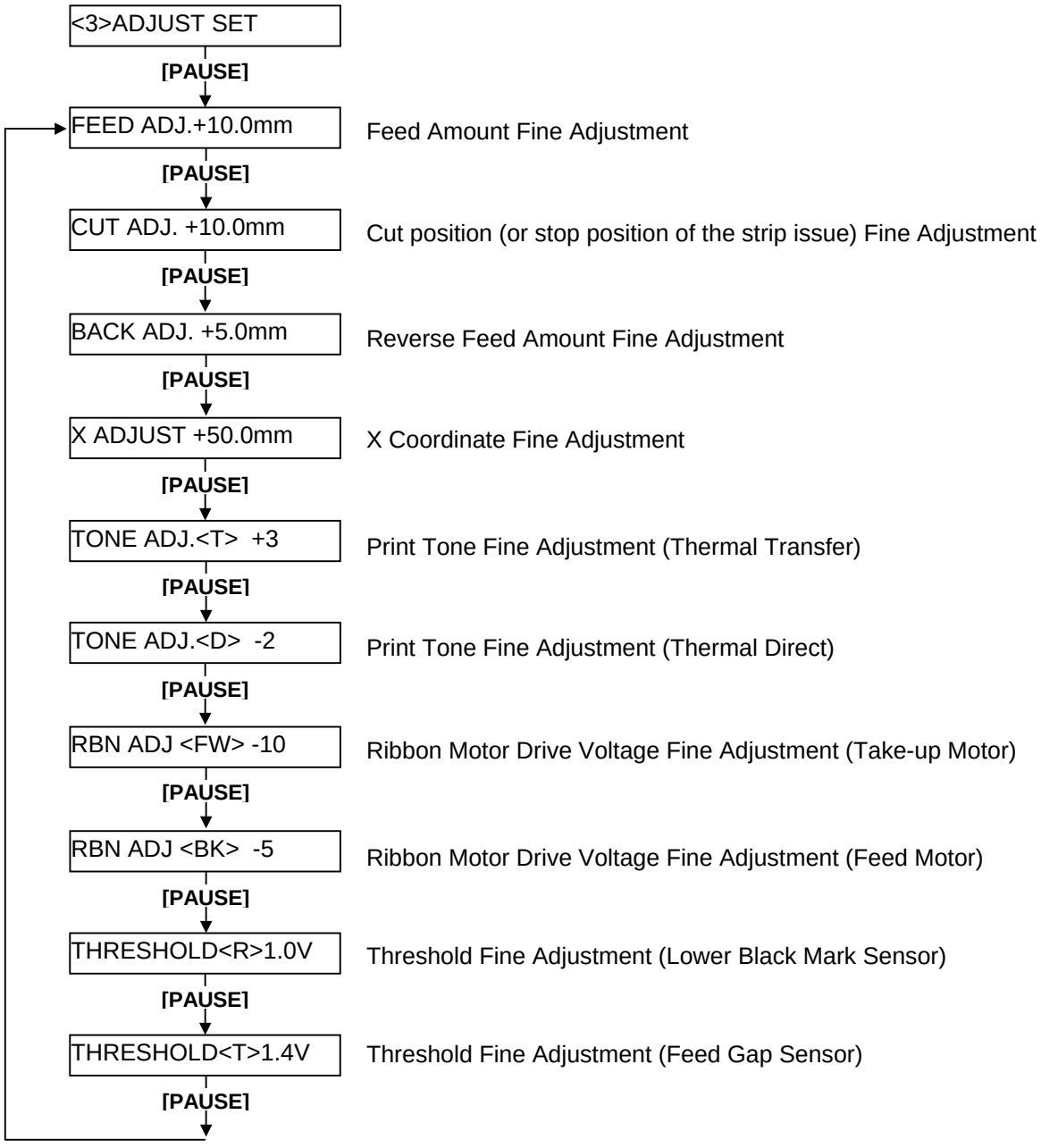
After selecting a Maxi code specification, press the **[PAUSE]** key.

2.3 Printer Parameter Fine Adjustment

■ Outline of Printer Parameter Fine Adjustment

In the Printer Parameter Fine Adjustment mode, you can fine adjust each parameter, such as Print tone, Print start position, Threshold, etc. which are set by the PC command. This is useful when using several types of media by turns or when the print start position or cut position (or stop position of the strip issue) is required to be fine adjusted.

The **Printer Parameter Fine Adjustment** menu contains the following.



■ How to Enter Printer Parameter Fine Adjustment Mode

Turn on the printer while pressing the **[FEED]** and **[PAUSE]** keys at the same time. Hold both keys until the "<1>DIAG. Vx.x" Message appears.

<1>DIAG. Vx.x

Press the **[FEED]** key twice.
The printer is at the start of the Printer Parameter Fine Adjustment menu.

<3>ADJUST SET

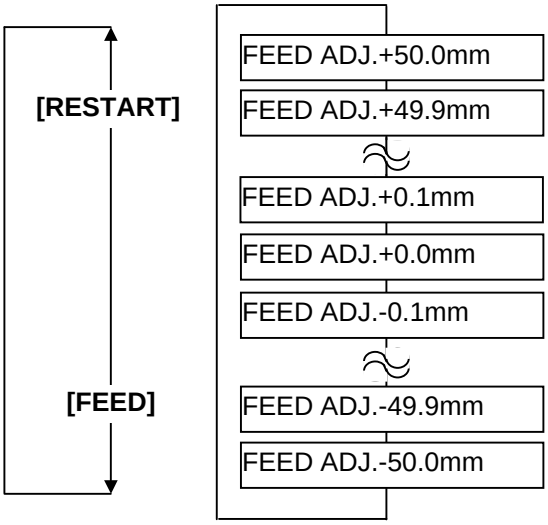
NOTES: *1. When pressing the **[FEED]** and **[RESTART]** keys at the same time in the parameter setting, the message returns to "<3>ADJUST SET".*
*2. If holding the **[FEED]** or **[RESTART]** key for 0.5 seconds or longer in the Printer Parameter Fine Adjustment, the key is entered continuously.*
*3. A changed parameter becomes effective by pressing the **[PAUSE]**.*
*4. Use the **[FEED]** or **[RESTART]** key to select a desired value or option.*

2.3.1 Feed Amount Fine Adjustment

This parameter is to fine adjust a feed amount after printing (= to fine adjust the next media's print start position).
When "<3>ADJUST SET" appears, press the **[PAUSE]** key.

FEED ADJ.+10.0mm

Use the **[FEED]** or **[RESTART]** key to select a desired option. (Range: -50.0 mm to +50.0 mm)



[FEED] key: Pressing the **[FEED]** key one time causes a –0.1 mm change, up to –50.0 mm.
[RESTART] key: Pressing the **[RESTART]** key one time causes a +0.1 mm change, up to +50.0 mm.

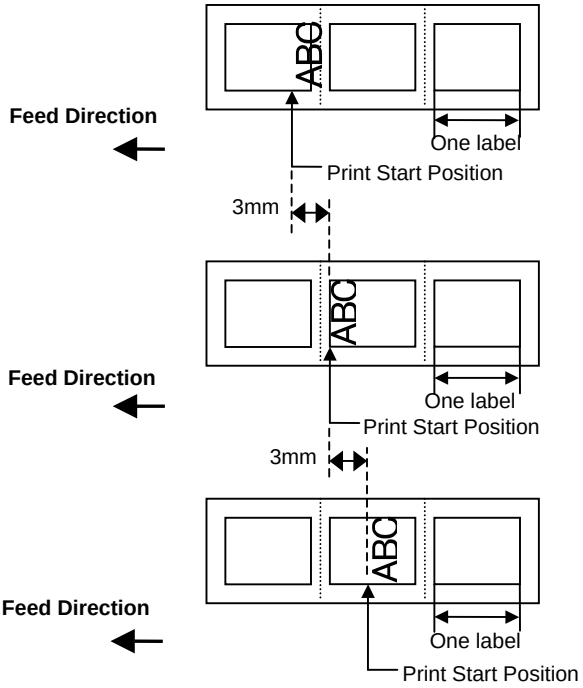
After completing the fine adjustment, press the **[PAUSE]** key.

• Example of Feed Amount Fine Adjustment

When setting +3.0 mm
Compared with "+0.0mm" position, the print start position is shifted forward.

When setting +0.0 mm

When setting –3.0 mm
Compared with "+0.0mm" position, the print start position is shifted backward.



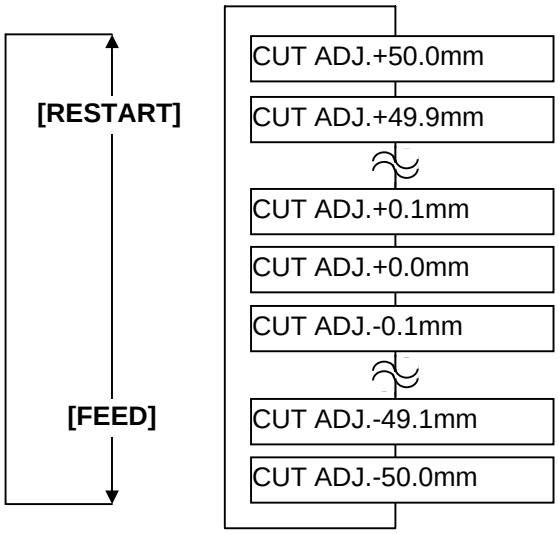
NOTE: *The fine adjustment value equals to the sum of the fine adjustment values set by the PC command and this parameter.*
The maximum feed length fine adjustment value is ±50.0 mm. When the value reached the maximum, the value remains unchanged even if the subsequent fine adjustment is performed.

2.3.2 Cut Position (or Stop Position of the Strip Issue) Fine Adjustment

This parameter is to fine adjust a cut position (or stop position of the strip issue).
When "<3>ADJUST SET" appears, press the **[PAUSE]** key twice.

CUT ADJ. +5.0mm

Use the **[FEED]** or **[RESTART]** key to select a desired option. (Range: -50.0 mm to +50.0 mm)



[FEED] key: Pressing the **[FEED]** key one time causes a –0.1 mm change, up to –50.0 mm.
[RESTART] key: Pressing the **[RESTART]** key one time causes a +0.1 mm change, up to +50.0 mm.

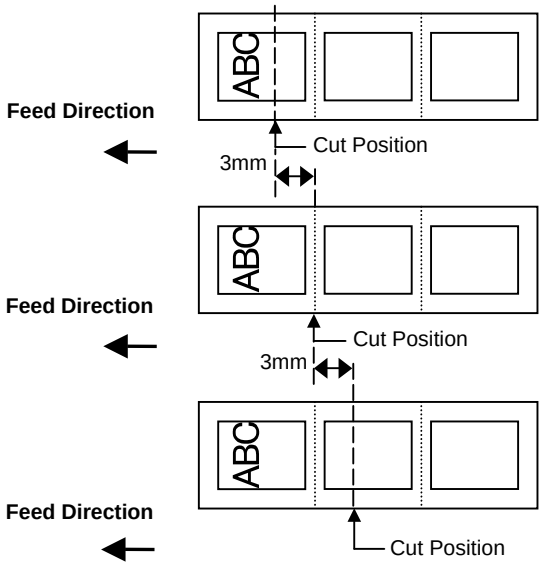
After completing the fine adjustment, press the **[PAUSE]** key.

• Example of Cut Position Fine Adjustment

When setting +3.0 mm
Compared with "+0.0 mm" position,
the cut position is shifted forward.

When setting +0.0 mm

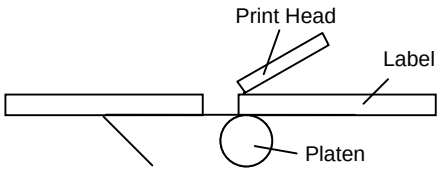
When setting –3.0 mm
Compared with "+0.0 mm" position,
the cut position is shifted backward.



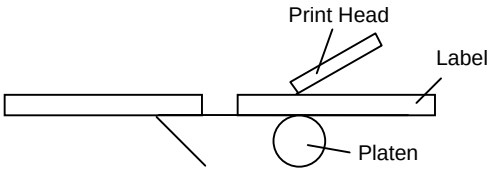
NOTES: *1. Cut issue is available only when the optional cutter module (B-7208-QM-R) is installed.*
2. The fine adjustment value equals to the sum of the fine adjustment values set by the PC command and this parameter.
The maximum cut position fine adjustment value is ±50.0 mm. When the value reached the maximum, the value remains unchanged even if the subsequent fine adjustment is performed.

• Example of Stop Position Fine Adjustment for the Strip Issue

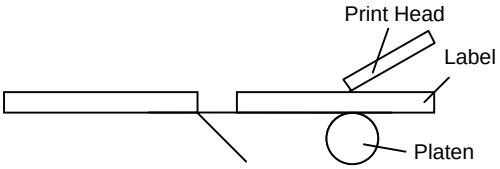
When setting +3.0 mm



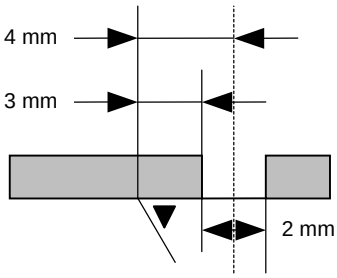
When setting +0.0 mm



When setting –3.0 mm



NOTE: *Assuming the label gap is 2 mm, the stop position of the strip issue is designed in a manner so that printing stops when the distance from the middle of the gap between labels to the end of the strip shaft is 4 mm.*
When the gap is more than 2 mm and the above-mentioned stop position is not proper, the stop position should be adjusted using the stop position fine adjust function for the strip issue.

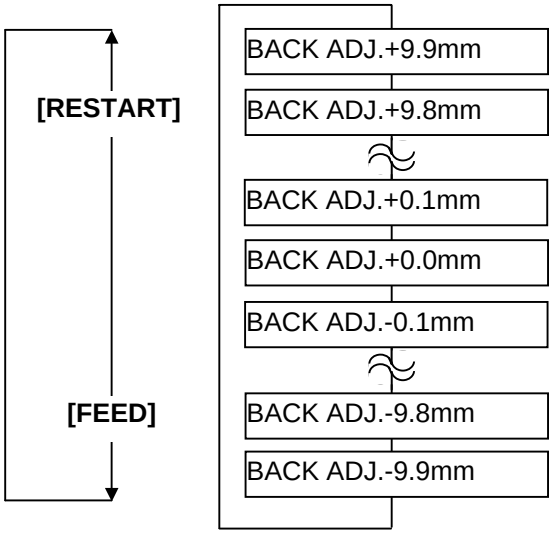


2.3.3 Reverse Feed Amount Fine Adjustment

This parameter is to fine adjust a reverse feed amount.
When "<3>ADJUST SET" appears, press the **[PAUSE]** key until the following display appears.

BACK ADJ. +5.0mm

Use the **[FEED]** or **[RESTART]** key to select a desired option. (Range: -9.9 mm to +9.9 mm)



[FEED] key: Pressing the **[FEED]** key one time causes a –0.1 mm change, up to –9.9 mm.
[RESTART] key: Pressing the **[RESTART]** key one time causes a +0.1 mm change, up to +9.9 mm.

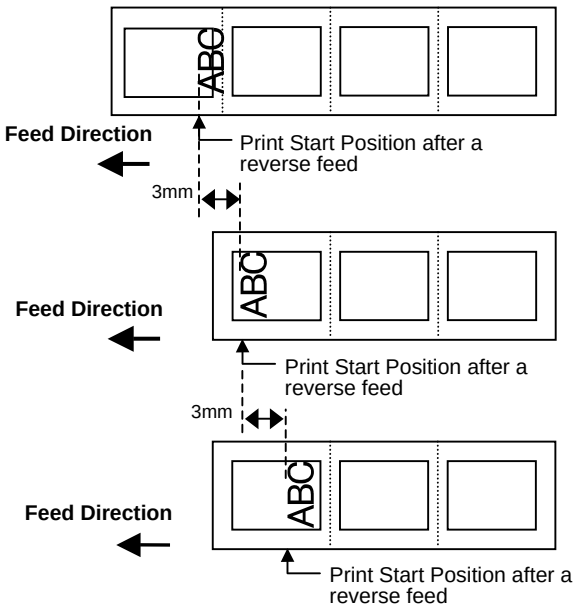
After completing the fine adjustment, press the **[PAUSE]** key.

• Example of Reverse Feed Amount Fine Adjustment

When setting +3.0 mm
Compared with "+0.0mm" position, the stop position after printing is shifted forward.

When setting +0.0 mm

When setting –3.0 mm
Compared with "+0.0mm" position, the stop position after printing is shifted backward.



NOTES:

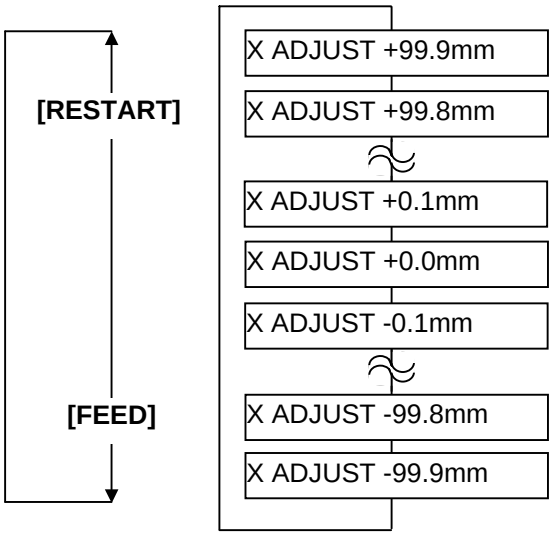
1. *The fine adjustment value equals to the sum of the fine adjustment values set by the PC command and this parameter. The maximum reverse feed amount fine adjustment value is ±9.9 mm. When the value reached the maximum, the value remains unchanged even if the subsequent fine adjustment is performed.*
2. *There may be cases where a label is not returned to the home position depending on the print conditions, even if a reverse feed amount is the same as a forward feed amount.*
   When an operation including a reverse feed (cut issue, strip issue for auto labeler, forward feed standby after an issue) is performed using a sensor, a label/tag may not be returned to the home position resulting an error, if the label pitch length is almost the same as the distance between the thermal print head and the paper sensor. To prevent this problem, the reverse feed amount should be increased by performing the reverse feed amount fine adjustment in the + direction.

2.3.4 X Coordinate Fine Adjustment

This parameter is to fine adjust the print position on X coordinate.
When "<3>ADJUST SET" appears, press the **[PAUSE]** key until the following display appears.

```
X ADJUST +5.0mm
```

Use the **[FEED]** or **[RESTART]** key to select a desired option. (Range: -99.9 mm to +99.9 mm)



[FEED] key: Pressing the **[FEED]** key one time causes a –0.1 mm change, up to –99.9 mm.
[RESTART] key: Pressing the **[RESTART]** key one time causes a +0.1 mm change, up to +99.9 mm.

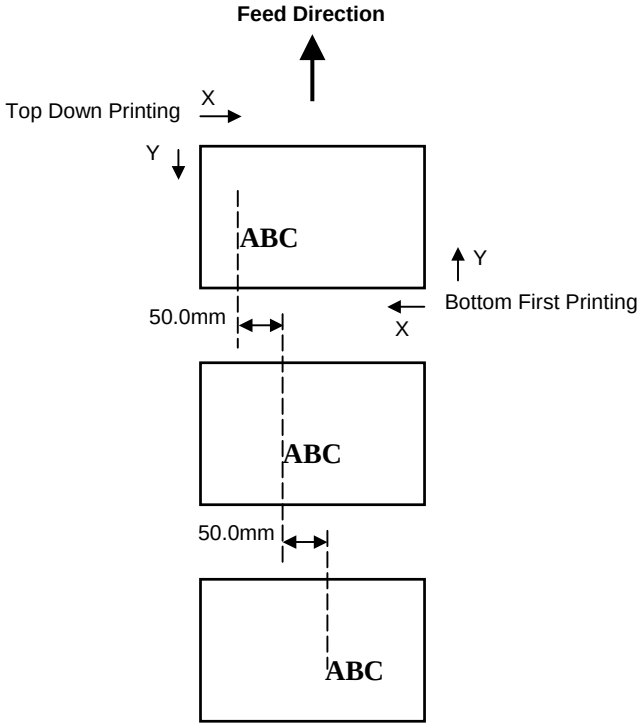
After completing the fine adjustment, press the **[PAUSE]** key.

• Example of X Coordinate Fine Adjustment

When setting –50.0 mm
Compared with "+0.0mm" position, the print position is shifted to the left.

When setting +0.0 mm

When setting +50.0 mm
Compared with "+0.0mm" position, the print position is shifted to the right.



NOTES:

1. *The X coordinate fine adjustment is performed to fine adjust the print position in horizontal direction (left or right).*
2. *Adjust the X coordinate within the effective print range. After the value reaches the coordinate 0, the value remains unchanged even if the subsequent fine adjustment is performed in the negative direction.*
3. *This adjustment cannot be used in the Self Test mode or Test print.*
4. *The fine adjustment value equals to the sum of the fine adjustment values set by the PC command and this parameter. The maximum X coordinate fine adjustment value is ±99.9 mm. When the value reached the maximum, the value remains unchanged even if the subsequent fine adjustment is performed.*

2.3.5 Print Tone Fine Adjustment (Thermal Transfer/Thermal Direct Print)

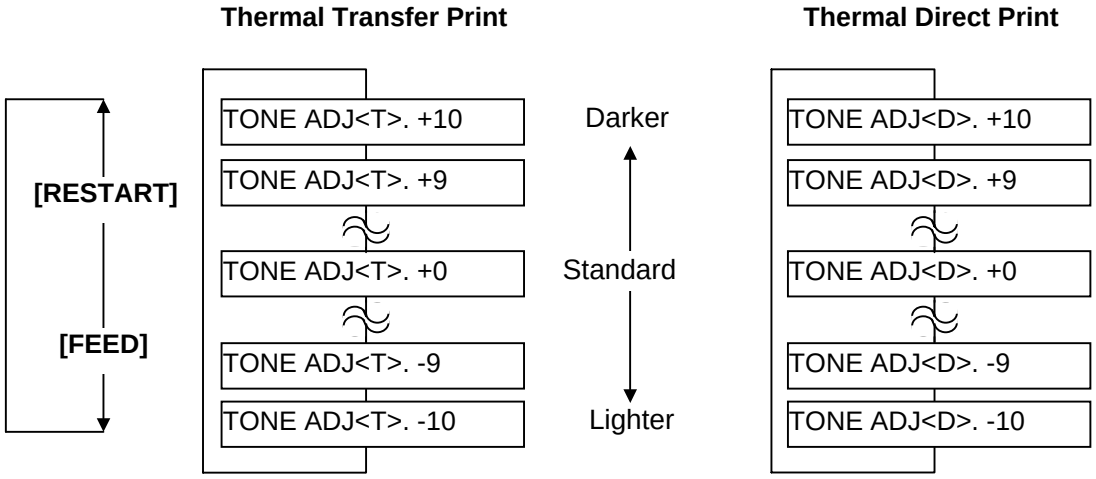
This parameter is to fine adjust the Print Tone.
When "<3>ADJUST SET" appears, press the **[PAUSE]** key until the following display appears.

TONE ADJ.<T> +3	Print Tone for thermal transfer printing

To fine adjust the print tone for thermal direct printing, press the **[PAUSE]** key again.

TONE ADJ.<D> -2	Print tone for thermal direct printing

When the LCD display shows "TONE ADJ.<T>" or "TONE ADJ.<D>", select a desired value with the **[FEED]** or **[RESTART]** key. (Range: -10 to +10)



[FEED] key: Pressing the **[FEED]** key one time causes a –1 tone change, up to –10 tones.
[RESTART] key: Pressing the **[RESTART]** key one time causes a +1 tone change, up to +10 tones.

After completing the fine adjustment, press the **[PAUSE]** key.

NOTES: *1. The fine adjustment value equals to the sum of the fine adjustment values set by the PC command and this parameter. The maximum print tone fine adjustment values for thermal transfer printing are ±10. Those for thermal direct printing are –10 and +6. (The values +7 to +10 are internally corrected to +6.)*

2. This is useful when print tone is required to be fine adjusted.
e.g.) When the ribbon is changed to different type.

2.3.6 Ribbon Motor Voltage Fine Adjustment (Feed/Take-up Motor)

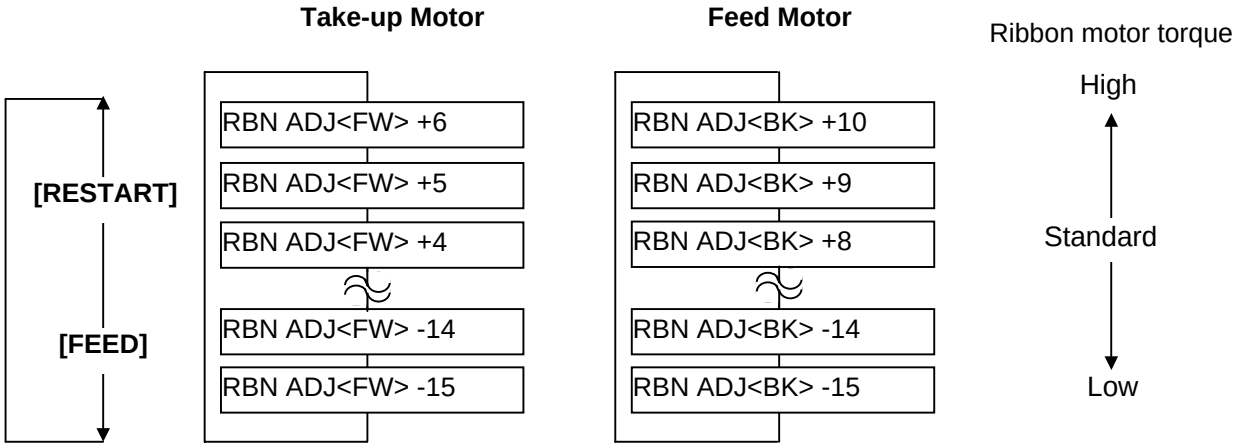
This parameter is to fine adjust the Ribbon Motor Voltage (Torque).
When the ribbon is slack or wrinkled and printing is affected, fine adjust the ribbon motor torque by using the following procedure.
When "<3>ADJUST SET" appears, press the **[PAUSE]** key until the following display appears.

RBN ADJ<FW> -10	Ribbon take-up motor voltage

To fine adjust the ribbon feed motor voltage, press the **[PAUSE]** key again.

RBN ADJ<BK> +0	Ribbon feed motor voltage

When the LCD display shows "RBN ADJ<FW>" or "RBN ADJ<BK>", select a desired value with the **[FEED]** or **[RESTART]** key. (Range: -15 to +6 for take-up motor / -15 to +10 for feed motor)



[FEED] key: Pressing the **[FEED]** key one time causes a –1 step change, up to –15 steps.
[RESTART] key: Pressing the **[RESTART]** key one time causes a +1 step change, up to +6 steps for take-up motor / +10 for feed motor.

After completing the fine adjustment, press the **[PAUSE]** key.

NOTES: *1. The fine adjustment value equals to the sum of the fine adjustment values set by the PC command and this parameter. The maximum ribbon motor voltage fine adjustment values for take-up motor are –15 and +6. Those for feed motor are –15 and +10. When the value reached the maximum, the value remains unchanged even if the subsequent fine adjustment is performed.*
2. One step corresponds to 5% of the standard voltage and up to 75% of the voltage can be decreased. Up to 30% of the voltage for the take-up motor and up to 50% for the feed motor can be increased.
3. Please make this adjustment if a ribbon error occurs though the ribbon is proper.

2.3.7 Threshold Manual Fine Adjustment (Black Mark/Feed Gap Sensor)

This parameter is to set a threshold voltage of the black mark sensor or feed gap sensor.
When pre-printed media is used, and if the black mark sensor or feed gap sensor cannot properly detect a print start position even after an automatic threshold setting has been performed, set a threshold voltage here.
Usually, a threshold is a midpoint between the voltage at a print area and the voltage at a black mark (black mark sensor) or a gap (feed gap sensor).

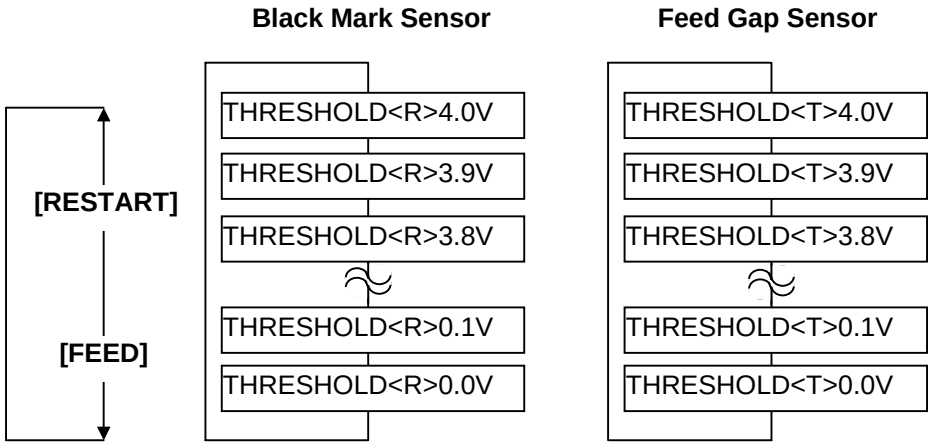
When "<3>ADJUST SET" appears, press the **[PAUSE]** key until the following display appears.

THRESHOLD<R>1.0V	Threshold setting for the lower black mark sensor

To set the threshold for the feed gap sensor, press the **[PAUSE]** key again.

THRESHOLD<T>1.4V	Threshold setting for the feed gap sensor

When the LCD display shows "THRESHOLD<R>" or "THRESHOLD<T>", select a desired value with the **[FEED]** or **[RESTART]** key. (Range: 0.0V to 4.0V)



[FEED] key: Pressing the **[FEED]** key one time causes a –0.1V change, up to 0.0V.
[RESTART] key: Pressing the **[RESTART]** key one time causes a +0.1V change, up to +4.0V.

After completing the fine adjustment, press the **[PAUSE]** key.

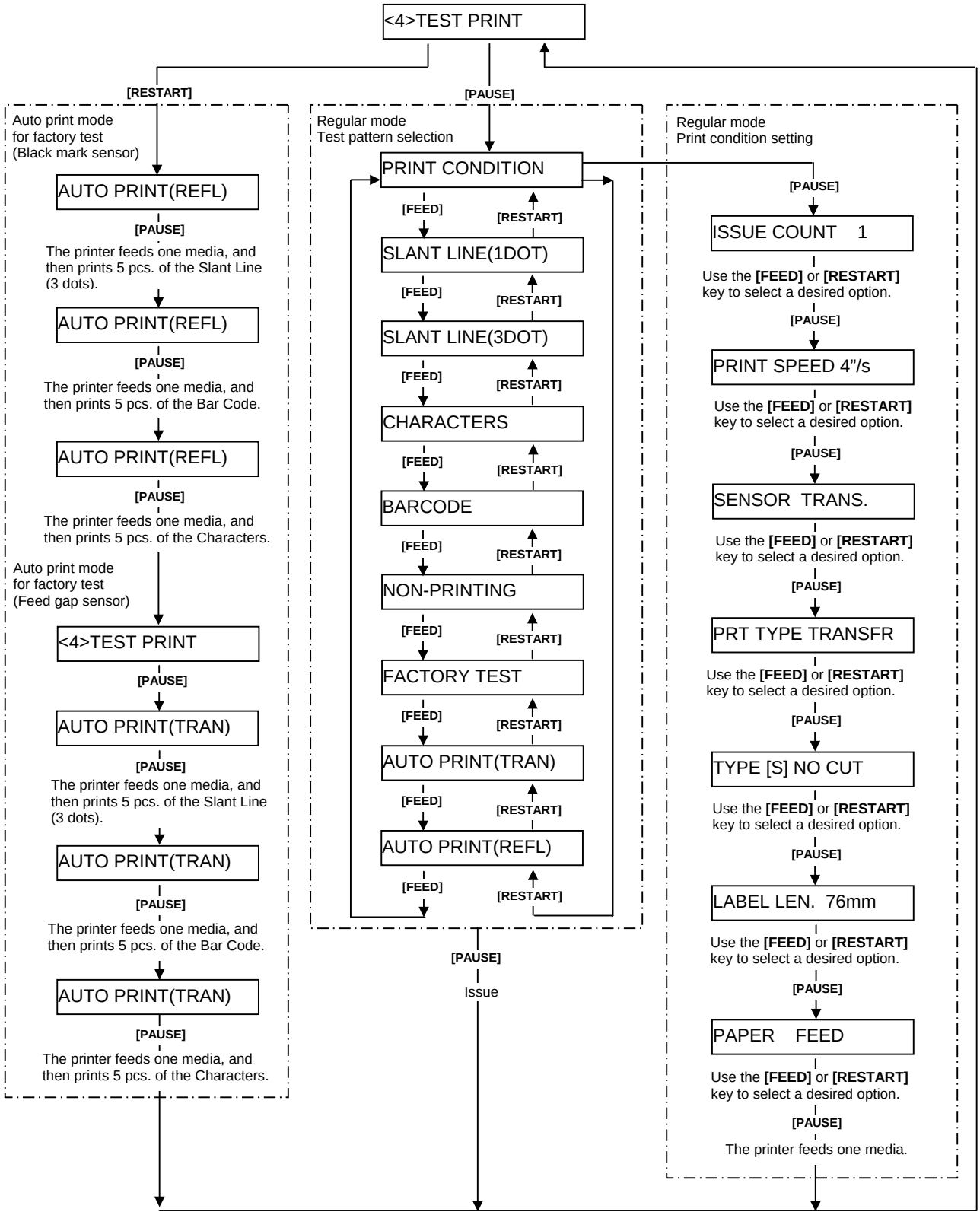
NOTE: *If "0.0V" is set as a threshold voltage, it will be automatically changed to the initial value below when the printer is turned off and back to on.*
THRESHOLD<R>: 1.4V
THRESHOLD<T>: 1.0V

2.4 Test Print

■ Outline of Test Print

In the Test Print mode, you can print the test patterns and set print conditions for a test print. This is useful to check the print quality of new media or ribbon.

The **Test Print** menu consists of the following:



■ How to Enter Test Print Mode

While pressing the **[FEED]** and **[PAUSE]** keys at the same time, turn on the printer. Hold both keys until the "<1>DIAG. Vx.x" Message appears.

<1>DIAG. Vx.x

Press the **[FEED]** key 3 times.
The Test Print is ready to be performed.

<4>TEST PRINT

NOTES: *1. When pressing the **[FEED]** and **[RESTART]** keys at the same time in the Test Print menu, the message returns to "<4>TEST PRINT".*
*2. If holding the **[FEED]** or **[RESTART]** key for 0.5 seconds or longer in the Test Print menu, the key is entered continuously.*
3. The fine adjustment parameters are effective for the Test Print. (except for X Coordinate Fine Adjustment.)
*4. If any error occurs, an error message appears, and the printer stops printing. After clearing the errors, press the **[PAUSE]** key to return to the System Mode menu. The printer does not restart printing automatically.*
*5. A changed parameter becomes enabled by pressing the **[PAUSE]** key.*
6. A label size greater than the image buffer length cannot be designated. If designated, the printer prints in the image buffer, or the printer stops because of an error.

2.4.1 Specifying the Print Condition for the Test Print

The print conditions for the Test Print should be specified before printing.
When "<4>TEST PRINT" appears, press the **[PAUSE]** key.

PRINT CONDITION

To set the print conditions, press the **[PAUSE]** key.

Issue Count Setting

Select an issue count from a range of 1 to 5000.

ISSUE COUNT 1

[RESTART]

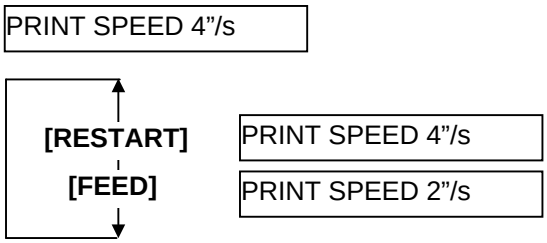
ISSUE COUNT 5000
ISSUE COUNT 1000
ISSUE COUNT 500
ISSUE COUNT 100
ISSUE COUNT 50
ISSUE COUNT 10
ISSUE COUNT 5
ISSUE COUNT 3
ISSUE COUNT 1

[FEED]

After selecting an issue count, press the **[PAUSE]** key to go to Print Speed Setting.

Print Speed Setting

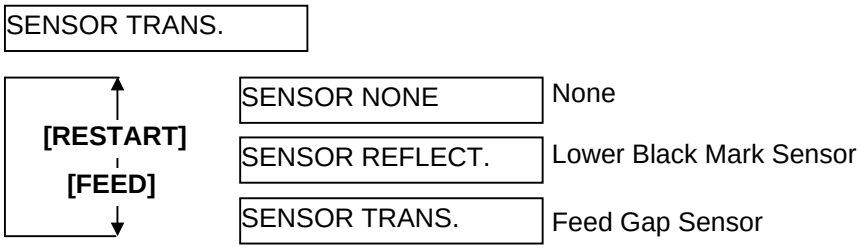
Select a print speed for the test print between 4"/sec. and 2"/sec.



After selecting a print speed, press the **[PAUSE]** key to go to Sensor Type Selection.

Sensor Type Selection

Select a sensor type among "TRANS" (Feed Gap Sensor), "REFLECT" (Lower Black Mark Sensor) and "NONE".

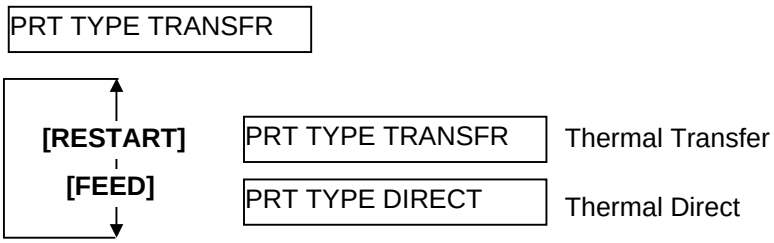


After selecting a sensor type, press the **[PAUSE]** key to go to Printing Mode Selection.

NOTE: *Select a sensor type which is proper for the media being used. Basically, the Reflective Sensor (Black Mark Sensor) is for tag paper, and the Transmissive Sensor (Feed Gap Sensor) is for label.*

Printing Mode Selection

Select a printing mode for the test print between "TRANSFR" (Thermal transfer) and "DIRECT" (Thermal direct).

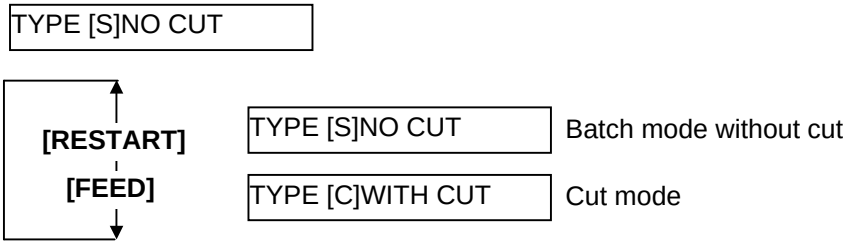


After selecting a printing mode, press the **[PAUSE]** key to go to Issue Mode Selection.

NOTE: *Select a printing mode which is proper for the operating conditions. Basically, the Thermal Transfer is for the use of ribbon, and the Thermal Direct is for the use of thermal paper.*

Issue Mode Selection

Select an issue mode for the test print between "[S]NO CUT" (Batch mode without cut) and "[C]WITH CUT" (Cut mode).

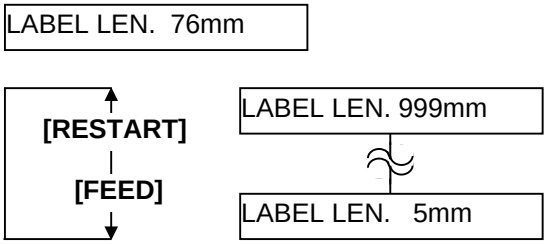


After selecting an Issue Mode, press the **[PAUSE]** key to go to Media Length Setting.

NOTE: *Cut mode is available only when the optional cutter module (B-7208-QM-R) is installed.*

Media Length Setting

Select a label length for the test print from a range of 5 mm to 999 mm.



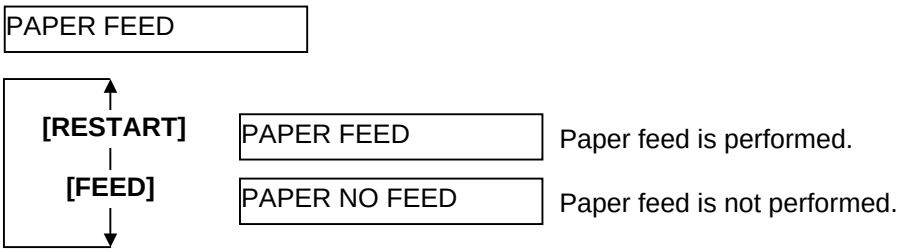
[FEED] key: Pressing the **[FEED]** key one time causes a –1 mm change, up to 5 mm.
[RESTART] key: Pressing the **[RESTART]** key one time causes a +1 mm change, up to 999 mm.

After selecting a media length, press the **[PAUSE]** key to go to Paper Feed Selection.

NOTE: *Pressing and holding the **[RESTART]** or **[FEED]** key causes the display to show the values quickly and continuously. To stop it, release the key.*

Paper Feed Selection

Select whether or not a paper feed is performed prior to a test print.



After selecting whether to perform a paper feed, press the **[PAUSE]** key. The display returns to the "<4>TEST PRINT".

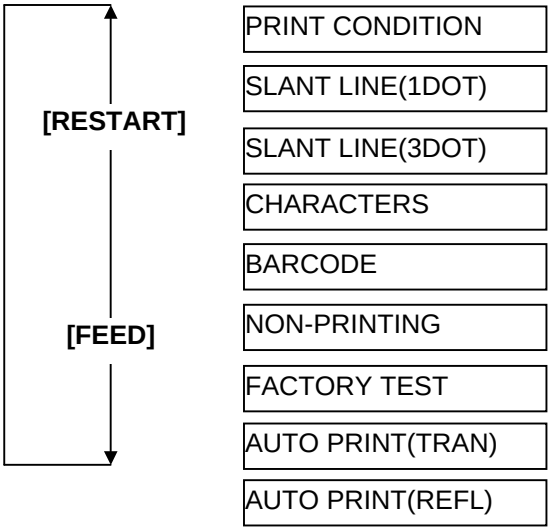
NOTE: *When "PAPER FEED" is selected, the printer feeds the media prior to a test print to adjust the print start position. When "PAPER NO FEED" is selected, the printer starts printing without print start position adjustment. If the print start position adjustment is unnecessary, you can save the media by selecting "PAPER NO FEED".*

2.4.2 Test Print Pattern Selection

Several print patterns are provided for test print.
When “<4>TEST PRINT” appears after paper feed selection, press the **[PAUSE]** key.

PRINT CONDITION

Use the **[FEED]** or **[RESTART]** key to select a desired option.

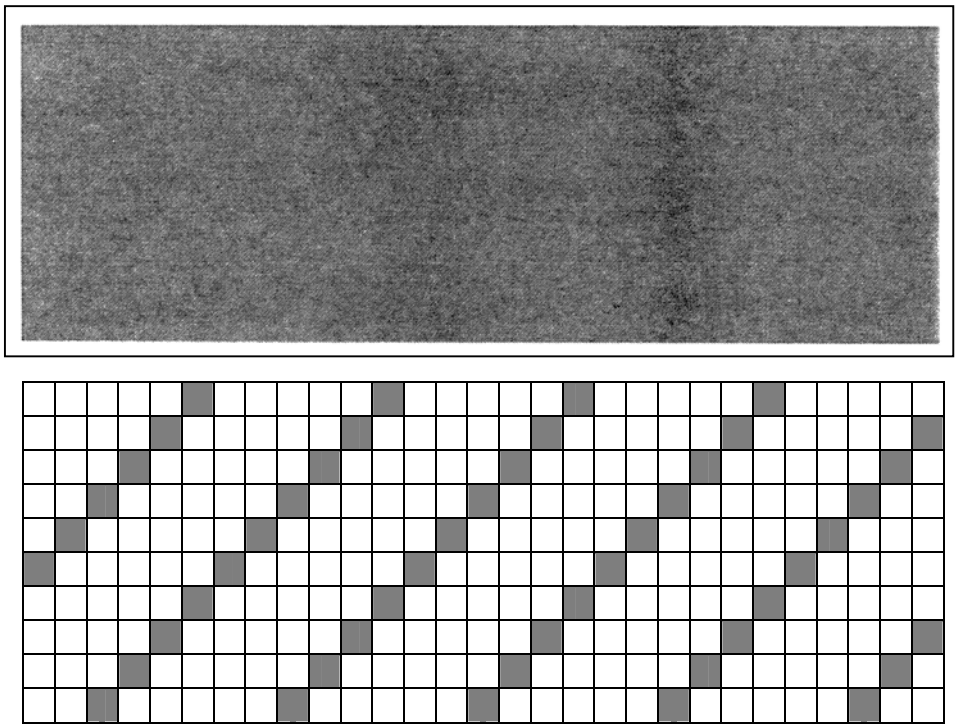


2.4.3 Slant Line (1 dot)

SLANT LINE(1DOT)

Pressing the **[PAUSE]** key while SLANT LINE (1 DOT) is displayed causes the slant line patterns (1 dot) to be printed.

■ **Print Sample of Slant Line (1 dot)**



(Magnified view: Print ratio 16.7%)

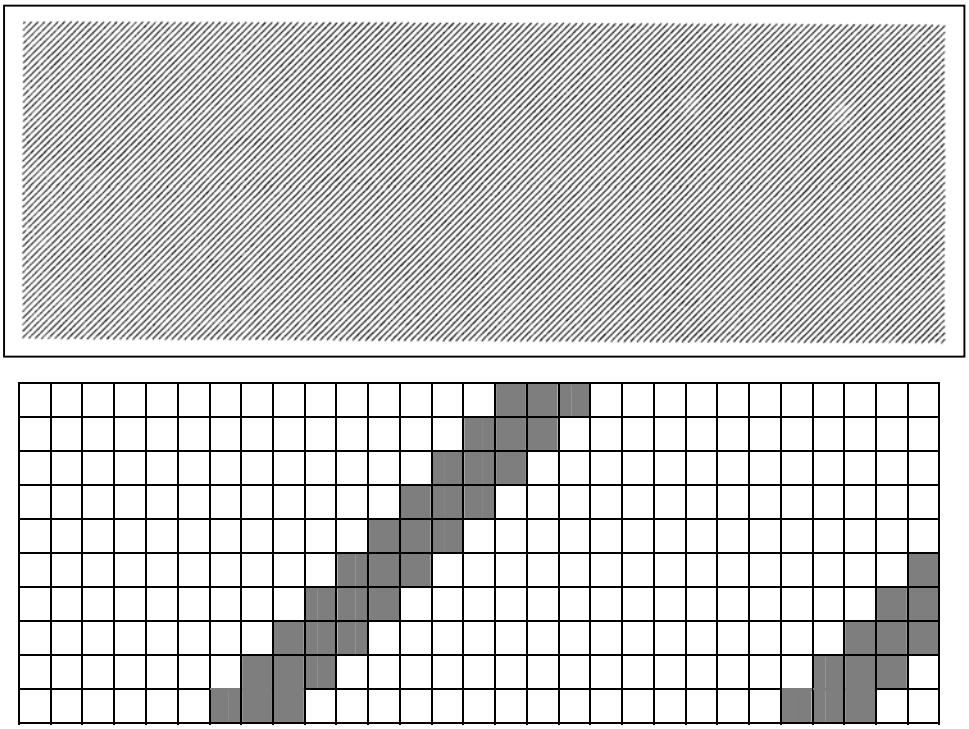
After printing is completed, the display returns to “<4>TEST PRINT”.
Pressing the **[PAUSE]** key causes the display to show “SLANT LINE (1 DOT)” again. Then, press the **[FEED]** key to display “SLANT LINE (3 DOT)”.

2.4.4 Slant Line (3 dots)

SLANT LINE(3DOT)

Pressing the **[PAUSE]** key while SLANT LINE (3 DOT) is displayed causes the slant line patterns (3 dots) to be printed.

■ **Print Sample of Slant Line (3 dots)**



(Magnified view: Print ratio 16.7%)

After printing is completed, the display returns to “<4>TEST PRINT”.
Pressing the **[PAUSE]** key causes the display to show “SLANT LINE (3DOT)” again. Then, press the **[FEED]** key to display “CHARACTERS”.

2.4.5 Characters

CHARACTERS

Pressing the **[PAUSE]** key while CHARACTERS is displayed causes the characters to be printed.

■ **Print Sample of Characters**

After printing is completed, the display returns to “<4>TEST PRINT”.
Pressing the **[PAUSE]** key causes the display to show “CHARACTERS” again. Then, press the **[FEED]** key to display “BARCODE”.

2.4.6 Barcode

BARCODE

Pressing the **[PAUSE]** key while BARCODE is displayed causes the bar codes to be printed.

■ **Print Sample of Barcodes**

After printing is completed, the display returns to “<4>TEST PRINT”.
Pressing the **[PAUSE]** key causes the display to show “BARCODE” again. Then, press the **[FEED]** key to display “NON-PRINTING”.

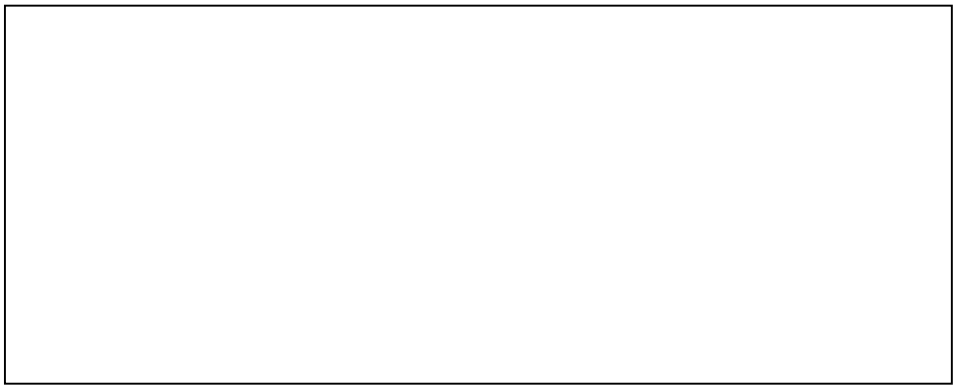
2.4.7 Non-Printing

NON-PRINTING

Pressing the **[PAUSE]** key while NON-PRINTING is displayed causes a blank media to be issued.

NOTE: *The Non-Printing function looks like a media feeding.*

- **Print Sample of Non-print**



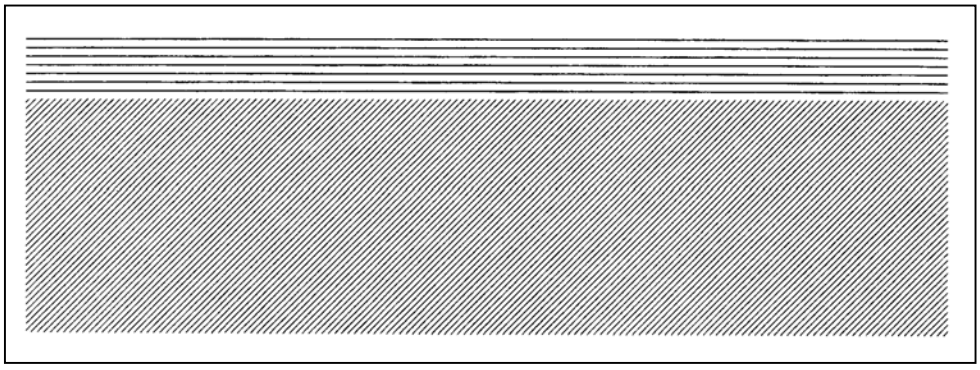
After printing is completed, the display returns to "<4>TEST PRINT".
Pressing the **[PAUSE]** key causes the display to show "NON-PRINTING" again. Then, press the **[FEED]** key to display "FACTORY TEST".

2.4.8 Factory Test

FACTORY TEST

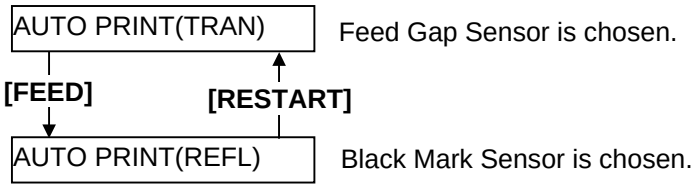
Pressing the **[PAUSE]** key while FACTORY TEST is displayed causes the factory test pattern to be printed. After printing is completed, the display returns to "<4>TEST PRINT".

- **Print Sample of Factory Test**



Pressing the **[PAUSE]** key causes the display to show "FACTORY TEST" again. Then, press the **[FEED]** key to display "AUTO PRINT (TRAN)".

2.4.9 Auto Print



Pressing the **[PAUSE]** key while AUTO PRINT (TRAN) or AUTO PRINT (REFL) is displayed causes the following automatic test print:

(1) **[PAUSE]** key ⟶ Feeds one media and prints slant lines (3 dots) on 5 pieces of media
(2) **[PAUSE]** key ⟶ Prints bar codes on 5 pieces of media
(3) **[PAUSE]** key ⟶ Prints characters on 5 pieces of media

NOTES: *1. Select "AUTO PRINT (TRAN)" when using labels, and "AUTO PRINT (REFL)" when using tag paper with black marks.*

2. Auto print is performed on the conditions below. Parameter setting and print tone fine adjustment value is ignored.

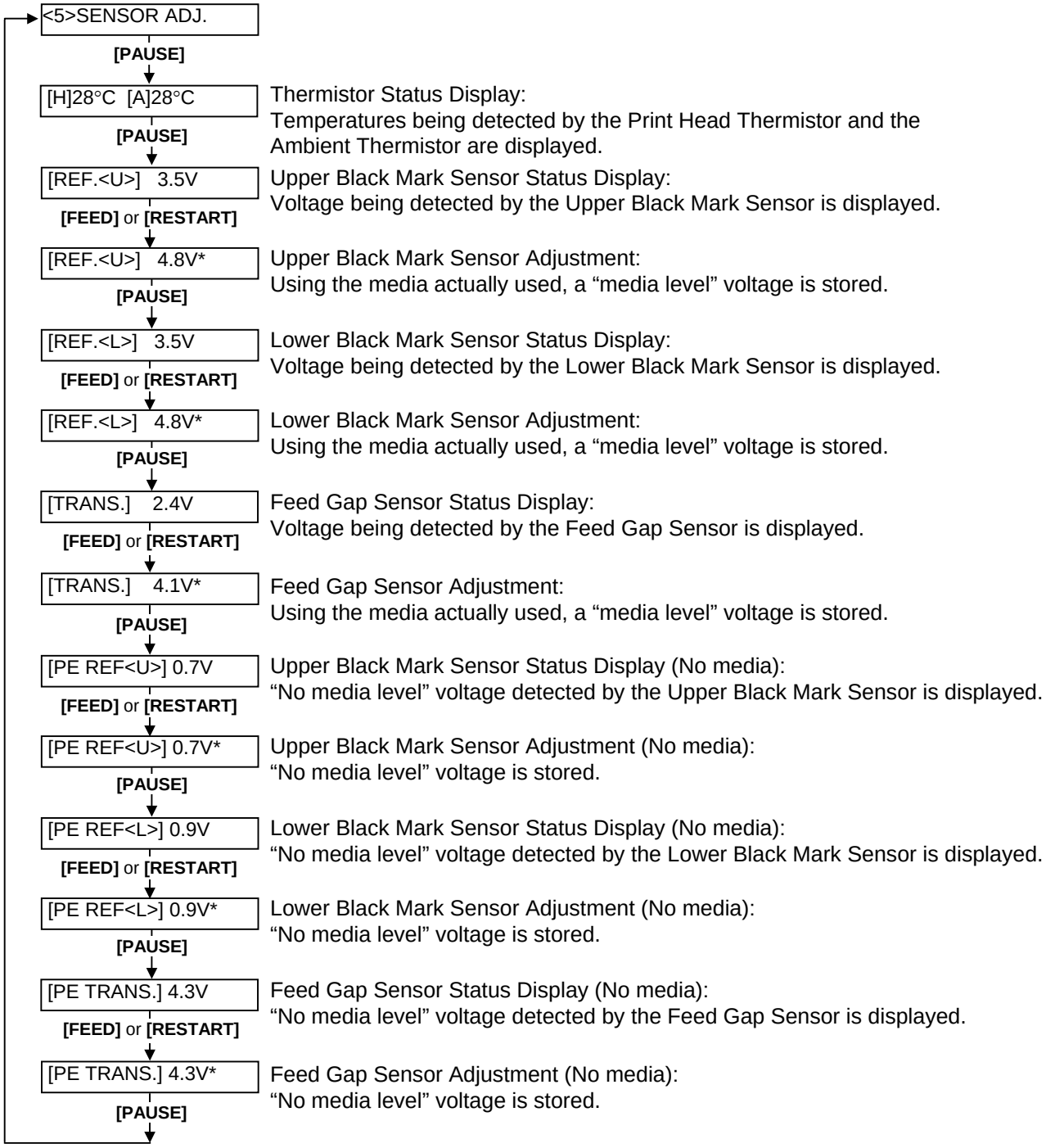
Print speed:	*4 inches/second*
Sensor type:	*Lower black mark or feed gap sensor*
Printing method:	*Thermal transfer*
Issuing mode:	*Batch printing*
Label size:	*76mm*
Print tone fine adjustment value:	*-1*

2.5 Sensor Adjustment

■ Outline of the Sensor Adjustment

In the Sensor Adjustment mode, the status of the sensors and thermistors is displayed. Also you can store media level voltage and media end level voltage for the Black Mark, Feed Gap, and Ribbon End Sensors.

The **Sensor Adjustment** menu contains the following:


<5>SENSOR ADJ.
[PAUSE]
[H]28°C [A]28°C
[PAUSE]
Thermistor Status Display:
Temperatures being detected by the Print Head Thermistor and the Ambient Thermistor are displayed.
[REF.<U>] 3.5V
[FEED] or [RESTART]
Upper Black Mark Sensor Status Display:
Voltage being detected by the Upper Black Mark Sensor is displayed.
[REF.<U>] 4.8V*
[PAUSE]
Upper Black Mark Sensor Adjustment:
Using the media actually used, a “media level” voltage is stored.
[REF.<L>] 3.5V
[FEED] or [RESTART]
Lower Black Mark Sensor Status Display:
Voltage being detected by the Lower Black Mark Sensor is displayed.
[REF.<L>] 4.8V*
[PAUSE]
Lower Black Mark Sensor Adjustment:
Using the media actually used, a “media level” voltage is stored.
[TRANS.] 2.4V
[FEED] or [RESTART]
Feed Gap Sensor Status Display:
Voltage being detected by the Feed Gap Sensor is displayed.
[TRANS.] 4.1V*
[PAUSE]
Feed Gap Sensor Adjustment:
Using the media actually used, a “media level” voltage is stored.
[PE REF<U>] 0.7V
[FEED] or [RESTART]
Upper Black Mark Sensor Status Display (No media):
“No media level” voltage detected by the Upper Black Mark Sensor is displayed.
[PE REF<U>] 0.7V*
[PAUSE]
Upper Black Mark Sensor Adjustment (No media):
“No media level” voltage is stored.
[PE REF<L>] 0.9V
[FEED] or [RESTART]
Lower Black Mark Sensor Status Display (No media):
“No media level” voltage detected by the Lower Black Mark Sensor is displayed.
[PE REF<L>] 0.9V*
[PAUSE]
Lower Black Mark Sensor Adjustment (No media):
“No media level” voltage is stored.
[PE TRANS.] 4.3V
[FEED] or [RESTART]
Feed Gap Sensor Status Display (No media):
“No media level” voltage detected by the Feed Gap Sensor is displayed.
[PE TRANS.] 4.3V*
[PAUSE]
Feed Gap Sensor Adjustment (No media):
“No media level” voltage is stored.

NOTES: *1. Perform a sensor threshold setting after changing the media to a different type.*
2. An error related to the print position may be caused by the improperly set sensor threshold. In this case please perform a threshold setting in this mode. In case further adjustment is required, refer to ***Section 2.3 Printer Parameter Fine Adjustment*** *to make the threshold fine adjustment.*
3. When pressing the ***[FEED]*** *and* ***[RESTART]*** *keys at the same time in the Sensor Adjustment menu, the display returns to "<5>SENSOR ADJ.".*
4. The sensor status is checked every 200 msec. Therefore, the display may change according to the status.

■ **How to Enter the Sensor Adjustment Mode**

While pressing the **[FEED]** and **[PAUSE]** keys at the same time, turn on the printer. Hold both keys until the "<1>DIAG. Vx.x" Message appears.

```
<1>DIAG.  Vx.x
```

Press the **[FEED]** key 4 times. The printer is at the start of the Sensor Adjustment menu.

```
<5>SENSOR ADJ.
```

2.5.1 Thermistor Status Display

When "<5>SENSOR ADJ." appears, press the **[PAUSE]** key to display the following.

```
[H]20°C  [A]22°C
```

Ambient Temperature Thermistor Status
0 to 86 °C

Print Head Thermistor Status
0 to 86 °C

Press the **[PAUSE]** key to show a real-time upper black mark sensor status.

2.5.2 Upper Black Mark Sensor Adjustment

```
[REF.<U>]  3.8V
```

Real-time status detected by the Upper Black Mark Sensor
0.0V to 5.0V

Follow the procedure below to store a media level voltage of the upper black mark sensor.

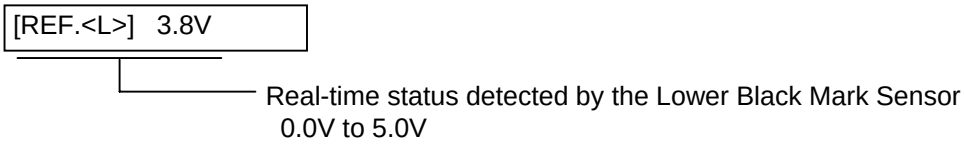
(1) Load a tag stock in the printer so that the Upper Black Mark Sensor detects a print area (no black mark).
(2) Press and hold the **[RESTART]** or **[FEED]** key for more than 3 seconds.

```
[REF.<U>]  4.8V*
```

When storing a media level voltage is completed, "*" appears.

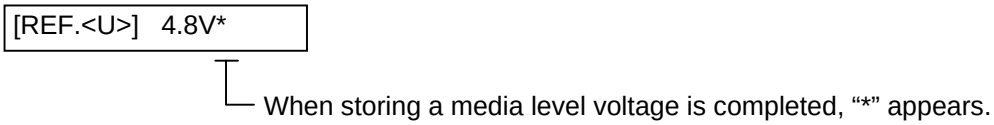
(3) Remove the tag stock from the printer.
(4) Press the **[PAUSE]** key to show a real-time lower black mark sensor status.

2.5.3 Lower Black Mark Sensor Adjustment



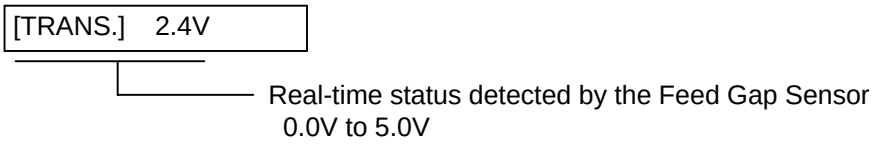
Follow the procedure below to store a media level voltage of the lower black mark sensor.

(1) Load a tag stock in the printer so that the Lower Black Mark Sensor detects a print area (no black mark).
(2) Press and hold the **[RESTART]** or **[FEED]** key for more than 3 seconds.



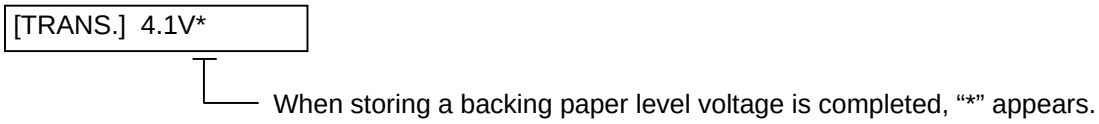
(3) Remove the tag stock from the printer.
(4) Press the **[PAUSE]** key to show a real-time feed gap sensor status.

2.5.4 Feed Gap Sensor Adjustment



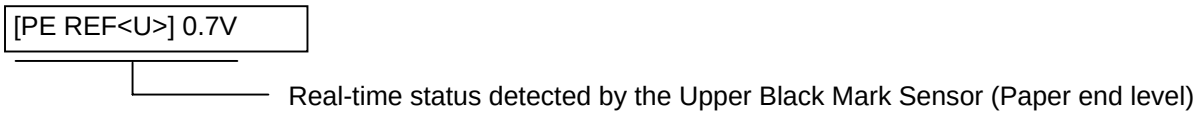
Follow the procedure below to store a backing paper level voltage of the Feed Gap Sensor.

(1) Place the backing paper (labels are removed) in the printer so that the Feed Gap Sensor detects it.
(2) Press and hold the **[RESTART]** or **[FEED]** key for more than 3 seconds.



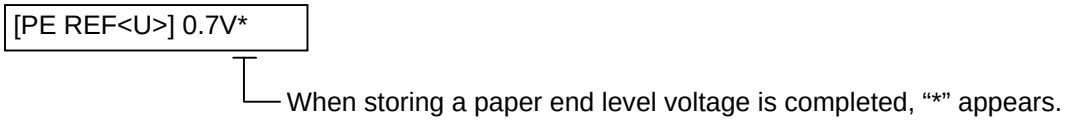
(3) Remove the backing paper from the printer.
(4) Press the **[PAUSE]** key to show a paper end status of the Upper Black Mark Sensor.

2.5.5 Upper Black Mark Sensor Adjustment (Paper End Level)



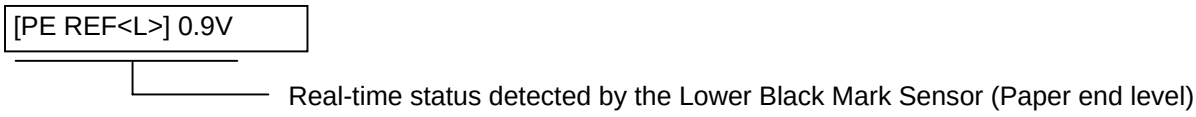
Follow the procedure below to store a paper end level voltage of the Upper Black Mark Sensor.

(1) Remove any paper from the detecting area of the Upper Black Mark Sensor.
(2) Press and hold the **[RESTART]** or **[FEED]** key for more than 3 seconds.



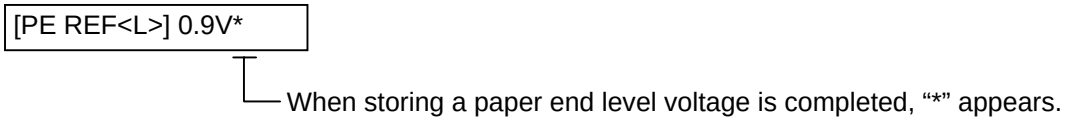
(3) Press the **[PAUSE]** key to show a paper end status of the Lower Black Mark Sensor.

2.5.6 Lower Black Mark Sensor Adjustment (Paper End Level)



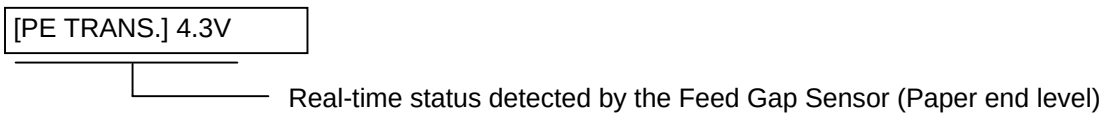
Follow the procedure below to store a paper end level voltage of the Lower Black Mark Sensor.

(1) Remove any paper from the detecting area of the Lower Black Mark Sensor.
(2) Press and hold the **[RESTART]** or **[FEED]** key for more than 3 seconds.



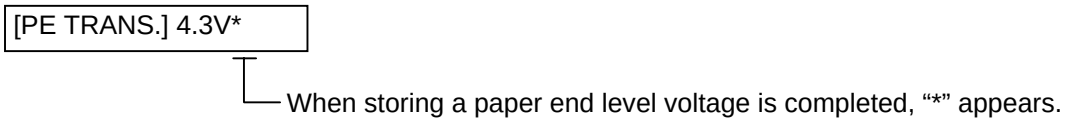
(3) Press the **[PAUSE]** key to show a paper end status of the Feed Gap Sensor.

2.5.7 Feed Gap Sensor Adjustment (Paper End Level)



Follow the procedure below to store a paper end level voltage of the Feed Gap Sensor.

(1) Remove any paper from the detecting area of the Feed Gap Sensor.
(2) Press and hold the **[RESTART]** or **[FEED]** key for more than 3 seconds.



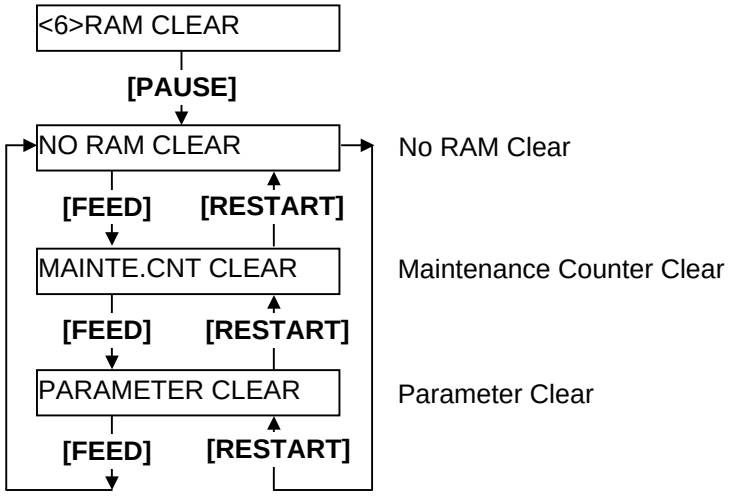
(3) Press the **[PAUSE]** key to return to "<5>SENSOR ADJ." display.

2.6 RAM Clear

■ Outline of RAM Clear

In the RAM Clear mode, clearing the Maintenance Counter and initializing the Parameters are possible. After replacing the print head, ribbon motor, or platen, perform a maintenance clear.

The **RAM Clear** menu contains the following:



■ How to Enter RAM Clear Mode

Turn on the printer while pressing the **[FEED]** and **[PAUSE]** keys at the same time. Hold both keys until the "<1>DIAG. Vx.x" Message appears.

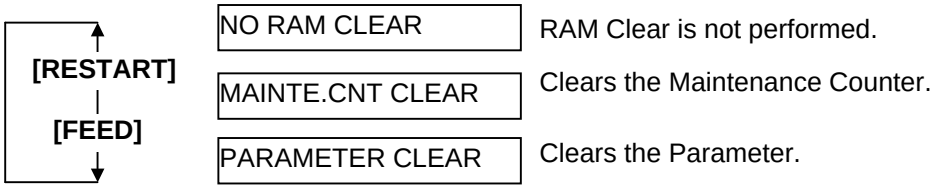
<1>DIAG. Vx.x

Press the **[FEED]** key 5 times. The printer is at the start of the RAM Clear menu.

<6>RAM CLEAR

2.6.1 RAM Clear Menu Selection

When "<6>RAM CLEAR" appears, press the **[PAUSE]** key.
Choose a RAM Clear menu among "No RAM Clear", "Maintenance Counter Clear", or "Parameter Clear".



NOTES: *1. To exit the RAM clear menu selection, press the **[FEED]** and **[RESTART]** keys at the same. The display returns to "<6>RAM CLEAR".*
2. Even after performing a RAM clear, the following items are still stored: Label distance covered, Sensor adjustment value, IP address, Socket port number, Language for the LCD message, data in the flash memory.

2.6.2 No RAM Clear

NO RAM CLEAR

Press the **[PAUSE]** key. No RAM Clear operation is performed and the display returns to "<6>RAM CLEAR".

Pressing the **[PAUSE]** key again causes the display to return to "NO RAM CLEAR".

2.6.3 Maintenance Counter Clear

MAINTE.CNT CLEAR

Press the **[PAUSE]** key to perform the Maintenance Counter Clear.
When the Maintenance Counter Clear is completed, the following message appears.

*** COMPLETE ***

Turn off the printer to exit this mode.

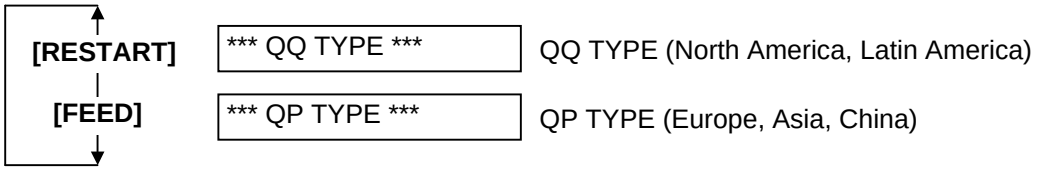
■ **Initial values after clearing the maintenance counter (MANTE.CNT CLEAR)**

Item	Initial Value
Label distance covered	0 km
Print distance	0 km
Cut count	0 time
Ribbon motor drive time	0 hours
RS-232C hardware error count	0
System error count	0
Momentary power failure count	0

2.6.4 Printer Parameter Clear

PARAMETER CLEAR

Choose a Printer Parameter Clear menu between "QQ TYPE" and "QP TYPE".



Press the **[PAUSE]** key to perform a Printer Parameter Clear.
When the Printer Parameter Clear is completed, the following message appears.

*** COMPLETE ***

Turn off the printer to exit this mode.

■ Initial values after clearing the parameters (PARAMETER CLEAR)

Item		Initial Value
Feed amount fine adjustment (PC), (KEY)		0 mm
Cut position (or stop position of the strip issue) fine adjustment (PC), (KEY)		0 mm
Reverse feed amount fine adjustment (PC), (KEY)		0 mm
Print tone fine adjustment (Thermal transfer), (PC), (KEY)		0
Print tone fine adjustment (Thermal direct), (PC), (KEY)		0
Ribbon take-up motor driving voltage fine adjustment (PC), (KEY)		0
Ribbon feed motor driving voltage fine adjustment (PC), (KEY)		0
Threshold manual fine adjustment for the lower black mark sensor		1.0V
Threshold manual fine adjustment for the feed gap sensor		1.4V
X coordinate fine adjustment (KEY)		0 mm
Character code and zero font code		PC-850, “0” (without slash)
Baud rate		9600 bps
Data length		8 bits
Stop bit		1 bit
Parity		None
Flow control code	QP type	XON/XOFF + READY/BUSY (DTR) protocol: (XON output when the power is on, XOFF output when the power is off)
	QQ type	READY/BUSY (DTR) protocol
LCD message language		English
Forward wait		ON
Control code		AUTO
Feed key function		FEED
Kanji code type		TYPE1
Euro code		B0H
Auto print head check		OFF
ACK/BUSY timing		TYPE 1
Web printer function		ON
Input prime (Reset operation when $\overline{\text{INIT}}$ signal is ON.)		OFF: Available
Expansion I/O mode		Standard mode
Plug & Play	QP type	OFF
	QQ type	ON
Print processing at the label end/ribbon error detection		The printer stops an issue operation.
Maxi code specification selection		TYPE1 (Compatible with the current version)
Automatic calibration		OFF
LAN enable/disable		LAN: Enabled, SNMP: Enabled
Status response		ON
Label pitch		76.2 mm
Effective print length		74.2 mm
Effective print width		216.8 mm
Printing mode		Thermal transfer
Sensor type		Feed gap sensor
Print speed		4”/sec.
Issue mode		Batch print
PC save automatic calling		ON
Basic interpreter		OFF: Unavailable
Basic interpreter trace		OFF: Unavailable
DHCP function		OFF: Unavailable
RTC low battery check		OFF
RTC data renewal timing		BATCH

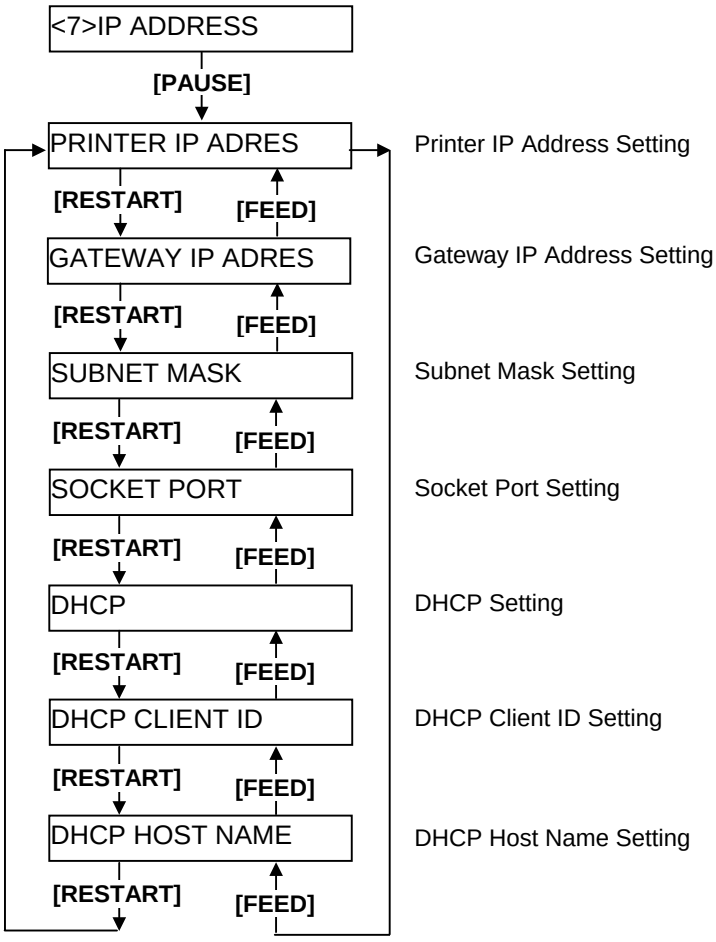
NOTE: *The initial values of Data length, Parity, Control code, LCD message language are different according to the destination code.*

2.7 IP Address Setting

■ Outline of the IP Address Setting

In the IP Address Setting mode, you can set the IP Address, Gateway Address, Subnet Mask, Socket Port, DHCP, DHCP Client ID, and DHCP Host Name which are necessary for a network communication. Since each setting value is different depending on your operating environment.

The **IP Address Setting** menu contains the following:



■ How to Enter IP Address Setting Mode

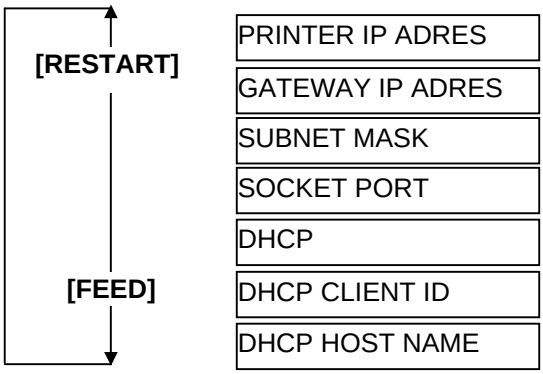
Turn on the printer while pressing the **[FEED]** and **[PAUSE]** keys at the same time. Hold both keys until the "<1>DIAG. Vx.x" Message appears.

```
<1>DIAG.   Vx.x
```

Press the **[FEED]** key until "<7>IP ADDRESS" is displayed.
The printer is at the start of the IP Address Setting menu.

```
<7>IP ADDRESS
```

When “<7>IP ADDRESS” appears, press the **[PAUSE]** key.
Choose an IP Address menu among “Printer IP Address”, “Socket Port”, “Gateway IP Address”, “Subnet Mask”, or “DHCP”.

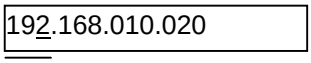


To enter each sub menu, press the **[PAUSE]** key.

2.7.1 Printer IP Address, Gateway IP Address, and Subnet Mask Settings

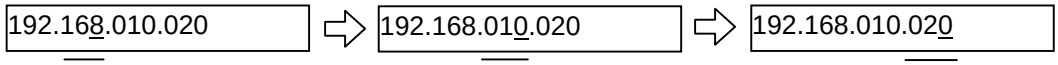
When “PRINTER IP ADRES” is displayed, press the **[PAUSE]** key.

Set the IP address using the following procedure.



Set the first 3-digit value with the **[FEED]** or **[RESTART]** key.

Press the **[PAUSE]** key to move the cursor to the next 3-digit value.
Set the next values in the same way.

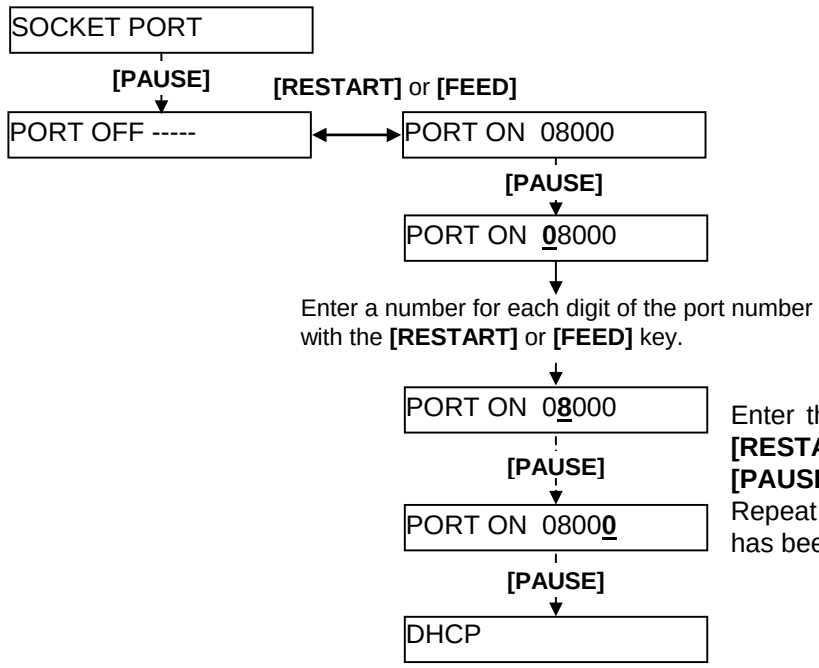


NOTES: *1. Pressing the **[FEED]** key one time causes a –1 change. Pressing the **[RESTART]** key one time causes a +1 change.*
*2. If holding the **[FEED]** or **[RESTART]** key for 0.5 seconds or longer in the parameter setting, the key is entered continuously.*

After the last 3-digit value is set, press the **[PAUSE]** key. The display will show “GATEWAY IP ADDRESS”.
Set the values for the Gateway IP Address and Subnet Mask, respectively.

2.7.2 Socket Port Setting

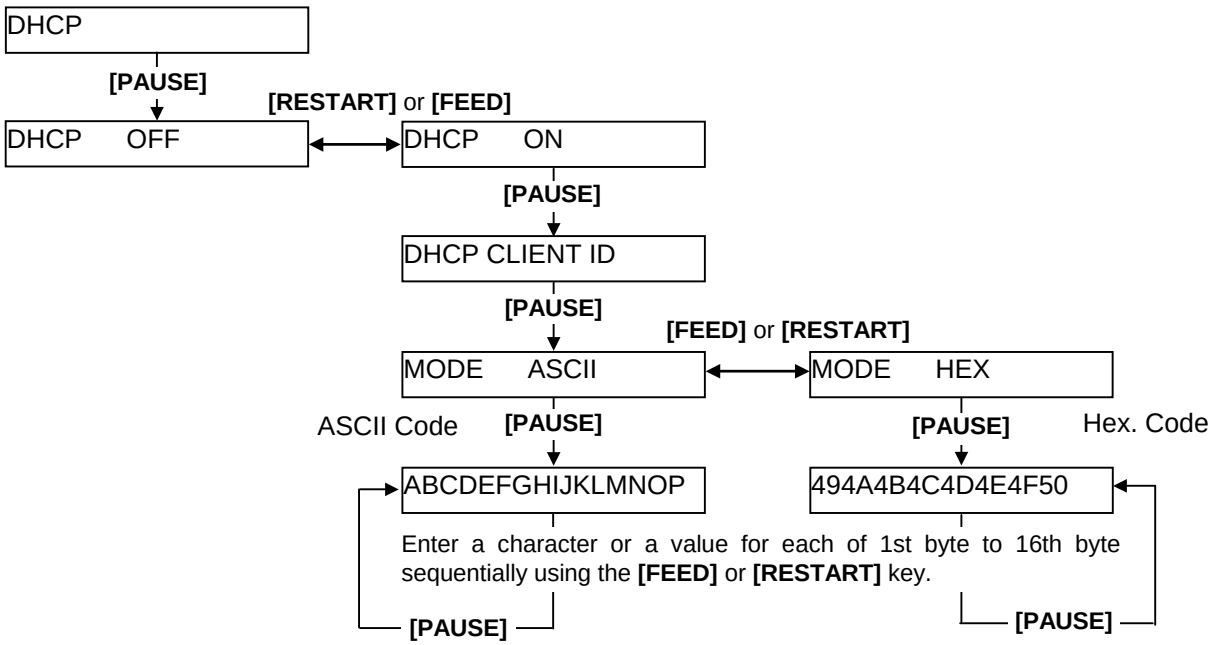
To set a socket port number, follow the procedure below.



Enter the 5th digit of the port number with the **[RESTART]** or **[FEED]** key. Pressing the **[PAUSE]** key allows the 4th digit setting. Repeat this procedure until the 1st digit setting has been completed.

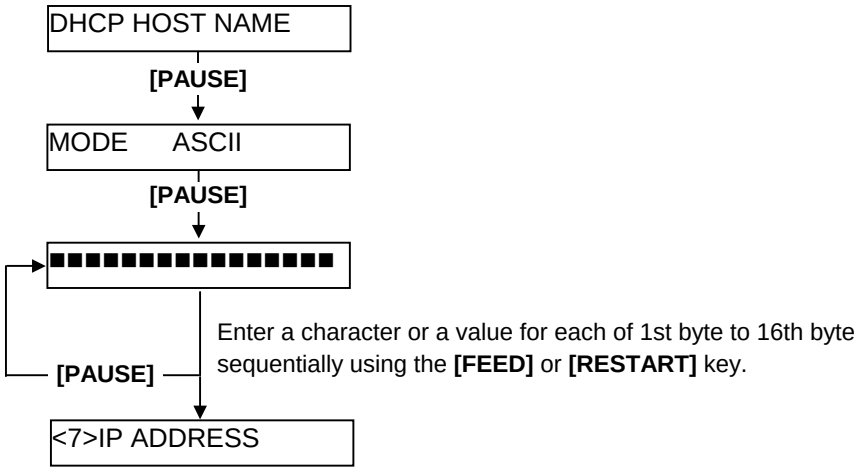
2.7.3 DHCP and DHCP Client ID Setting

To set the DHCP and the DHCP Client ID, follow the procedure below.



2.7.4 DHCP Host Name Setting

After DHPC Client ID has been set, the DHCP host name setting menu is displayed.
Press the **[PAUSE]** key and set the DHCP host name one byte by one byte.


DHCP HOST NAME
[PAUSE]
MODE ASCII
[PAUSE]
■■■■■■■■■■■■■■■■
Enter a character or a value for each of 1st byte to 16th byte sequentially using the [FEED] or [RESTART] key.
[PAUSE]
<7>IP ADDRESS

NOTES:

1. *Code used to enter a DHCP client ID is selectable between ASCII code (alphanumeric) and Hex. code.*
2. *Set a character or value for each byte by using the **[RESTART]** or **[FEED]** key.*
   ***[RESTART]** key: Increment **[FEED]** key: Decrement*
3. *Press the **[PAUSE]** key to enter the next byte. Repeat this until 16th byte is entered.*
4. *After the 16th byte of the DHCP host name is set, press the **[PAUSE]** key. At this time, the display will turn to "<7>IP ADDRESS".*
5. *A DHCP client ID can be used to check what IP address is assigned to which client on a DHCP server. If a DHCP client ID is not assigned, MAC address of a network device (LAN card or LAN interface board) will be notified to the server as a DHCP client ID instead.*
   A DHCP client ID is a 16-byte character string. As "FFH" (hex. code) is recognized as a terminator, if the top byte of DHCP client ID is "FFH", it is considered that a DHCP client ID is not assigned.

ASCII code and Hex. code correspondence table

Upper 4 bits / Lower 4 bits	2	3	4	5	6	7
0	SP	0	@	P	`	p
1	!	1	A	Q	a	q
2	"	2	B	R	b	r
3	#	3	C	S	c	s
4	$	4	D	T	d	t
5	%	5	E	U	e	u
6	&	6	F	V	f	v
7	'	7	G	W	g	w
8	(	8	H	X	h	x
9	)	9	I	Y	i	y
A	*	:	J	Z	j	z
B	+	;	K	[	k	{
C	,	<	L	\	l	|
D	-	=	M	]	m	}
E	.	>	N	^	n	
F	/	?	O	_	o	

SP = Space

(Example) To enter "TOSHIBA" in Hex. code:

54 4F 53 48 49 42 41

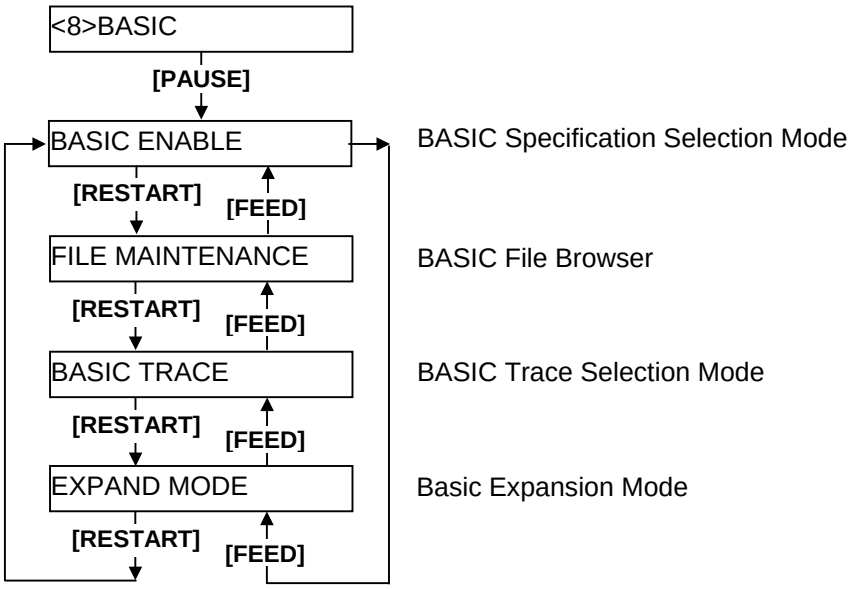
When the system mode settings have been completed, turn off the printer.

2.8 BASIC Setting

■ Outline of Basic Setting

The Basic function enables the printer to operate with the program created for other printers, by converting it to Basic program and downloading this Basic program to the printer. Setting the downloaded Basic program to be enabled/disabled, browsing the program file, data file, and area file, etc. are available in this mode. For details, refer to the Basic Interpreter Specification and the Specification of Program Loader for Basic Interpreter.

The Basic Setting menu contains the following.



■ How to Enter Basic Setting Mode

While pressing the **[FEED]** and **[PAUSE]** keys at the same time, turn on the printer. Hold both keys until the "<1>DIAG. Vx.x" Message appears.

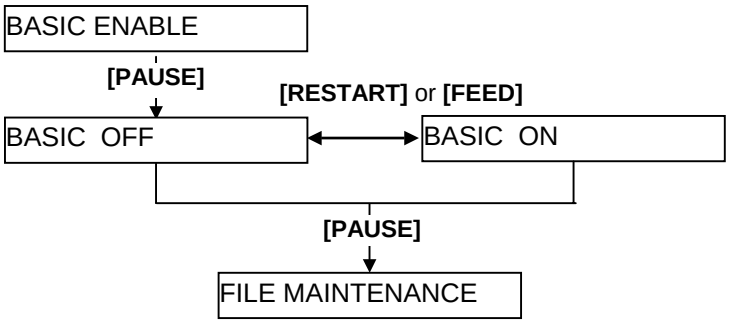
<1>DIAG. Vx.x

Press the **[FEED]** key until the following display appears.
The printer is at the start of the BASIC setting menu.

<8>BASIC

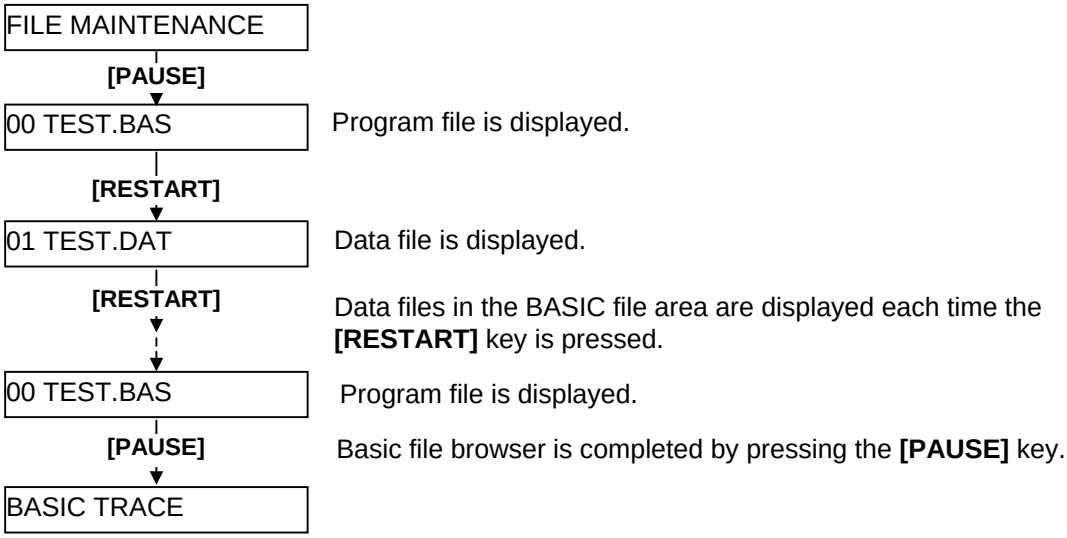
2.8.1 Basic Specification Selection Mode

This parameter is to choose whether to enable the BASIC specification function or not.
When "<8>BASIC" appears, press the **[PAUSE]** key.



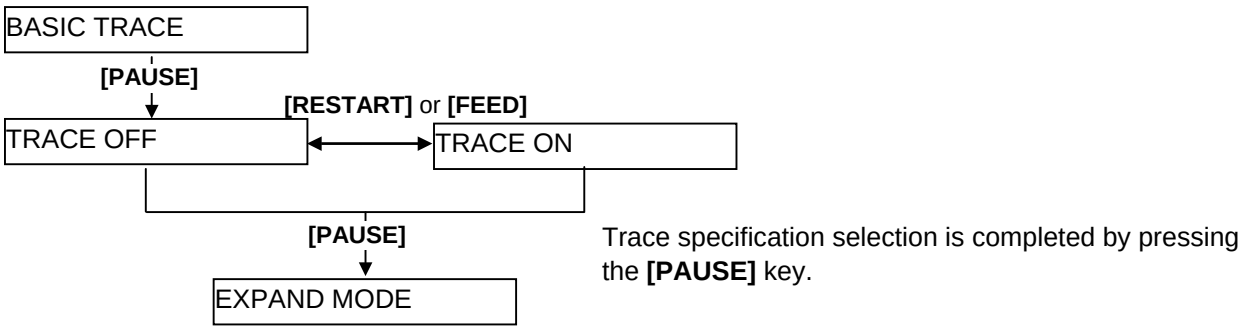
2.8.2 Basic File Browser

This parameter is to display the data files in the program file and basic file area. Using this function allows you to check the file names installed in the block.



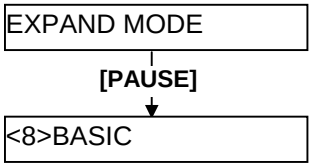
2.8.3 Basic Trace Selection Mode

This parameter is to choose whether to enable the Basic trace function or not.
Usually, this function is set to OFF. When this function is enabled, it will be easier to find an erroneous program as the program line number are displayed. However, the processing speed of BASIC interpreter will be slower.



2.8.4 Basic Expansion Mode (Execution of Basic Program)

This parameter is to execute the Basic expansion mode program.



When the program for the Basic expansion mode has been downloaded, it will be executed by pressing the **[PAUSE]** key. The way of completion is different depending on the program.

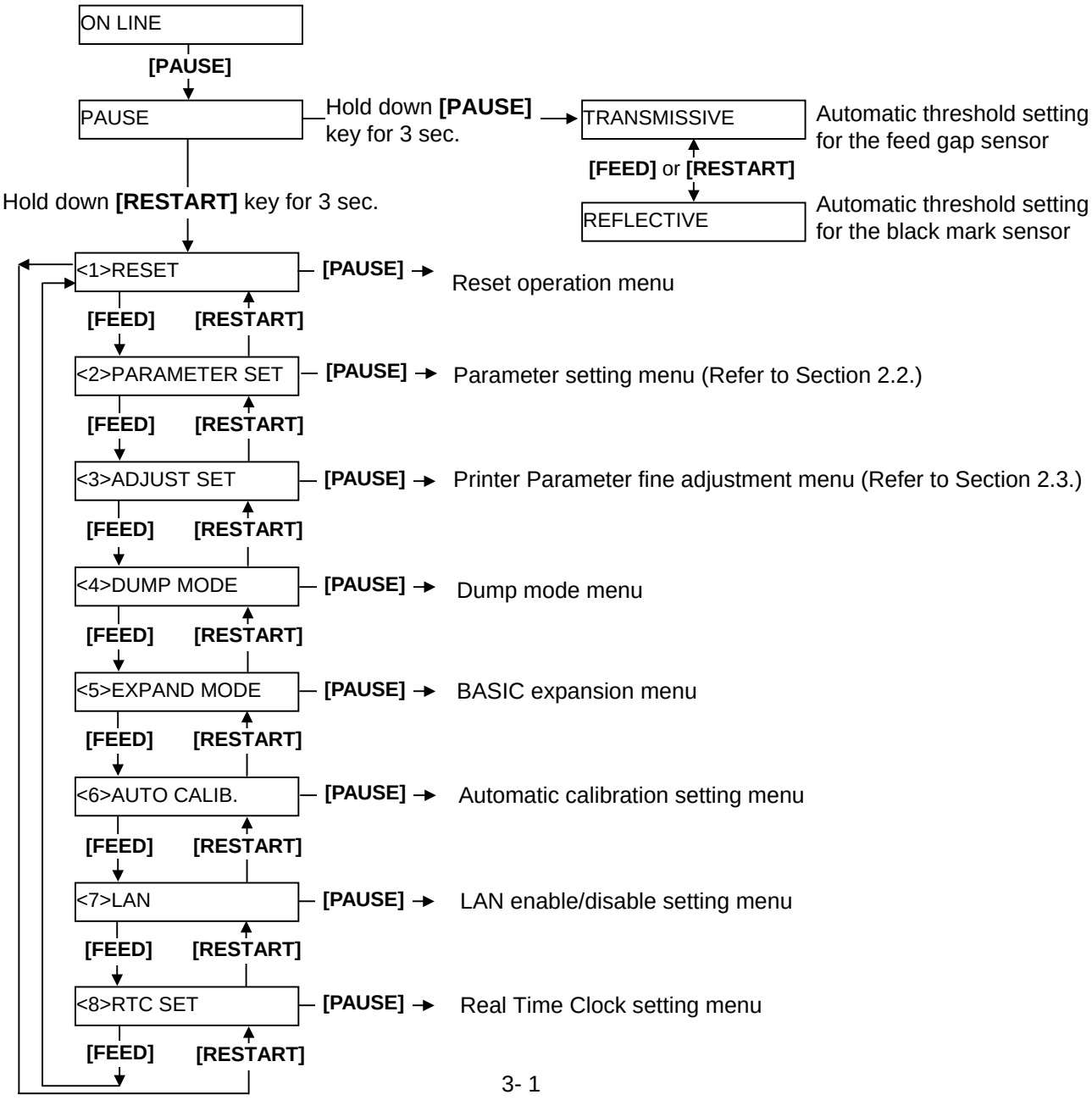
NOTE: *In this mode, it is possible to add the program exlucisvely for the B-850 to the programs for other printer systems.*

3. ON LINE MODE

In the ON LINE mode, the following settings can be performed.

- Automatic threshold setting for the Feed Gap Sensor
- Automatic threshold setting for the Black Mark Sensor
- Reset
- Parameter settings (Same as Section 2.2.)
- Printer parameter fine adjustment (Same as Section 2.3.)
- Dump mode
- Expansion mode
- Automatic calibration
- Enabling/disabling the LAN
- Real time clock setting

This section describes the automatic threshold setting for the feed gap sensor/black mark sensor, reset operation, dump mode, automatic calibration, LAN setting, and real time clock setting. The procedures of the parameter setting and printer parameter fine adjustment are described in Section 2.2 and Section 2.3 respectively.



■ LCD message and LED indication

Symbols in the message

1: ❍: The LED is illuminated. ⊙: The LED is flashing. ●: The LED is unlit.
2: ****: the number of unprinted media. Up to 9999 (in pieces)
3: ###: Flash memory card remaining memory for PC save area 0 to 3072 (in K bytes)
4: &&&&: Remaining flash memory capacity for storing writable characters 0 to 3072 (in K bytes)

No.	LCD Message	LED Indication			Printer Status	Restoration by RESTART key Yes/No	Acceptance of Status Request Reset Command Yes/No
		POWER	ON LINE	ERROR			
1	ON LINE	❍	❍	●	In online mode	-----	Yes
	ON LINE	❍	⊙	●	In online mode (The printer in communication)	-----	Yes
2	HEAD OPEN	❍	●	●	The print head block is opened in online mode.	-----	Yes
3	PAUSE ****	❍	●	●	The printer is paused.	Yes	Yes
4	COMMS ERROR	❍	●	❍	A parity, overrun, or framing error has occurred during communication through the RS-232C.	Yes	Yes
5	PAPER JAM ****	❍	●	❍	The media is jammed during paper feed.	Yes	Yes
6	CUTTER ERROR****	❍	●	❍	A problem has occurred with the cutter module.	Yes	Yes
7	NO PAPER ****	❍	●	❍	The media has run out, or the media is not loaded on the supply holder properly.	Yes	Yes
8	RIBBON ERROR****	❍	●	❍	The ribbon has run out, or has been torn. A problem has occurred with the sensor that determines the torque for the ribbon motor.	Yes	Yes
9	HEAD OPEN ****	❍	●	❍	Feed or printing was attempted with the print head block open.	Yes	Yes
10	HEAD ERROR	❍	●	❍	There is a problem with the print head.	Yes	Yes
11	EXCESS HEAD TEMP	❍	●	❍	The print head is overheated.	No	Yes
12	SAVING ####&&&&	❍	❍	●	In writable character or PC command save mode	-----	Yes
13	FLASH WRITE ERR.	❍	●	❍	An error has occurred while writing to flash memory.	No	Yes
14	FORMAT ERROR	❍	●	❍	An error has occurred in formatting the flash memory.	No	Yes
15	FLASH CARD FULL	❍	●	❍	Data cannot be stored because the flash memory..	No	Yes
16	POWER FAILURE	❍	●	❍	A power failure has occurred.	No	No
17	MEM. INTIAL…	❍	●	●	A flash memory card is being initialised.	-----	-----
18	EEPROM ERROR	❍	●	❍	Data cannot be read from/written to a backup EEPROM properly.	No	No

No.	LCD Message	LED Indication			Printer Status	Restoration by RESTART key Yes/No	Acceptance of Status Request Reset Command Yes/No
		POWER	ON LINE	ERROR			
19	SYSTEM ERROR	❍	●	❍	When the following abnormal operations are performed, a system error occurs: (a) Command fetch from an odd address (b) Access to word data at an odd address (c) Access to long-word data at an odd address (d) Access to the area of 80000000H to FFFFFFFFH in the logic space in user mode. (e) An undefined instruction in an area other than a delay slot was decoded. (f) An undefined instruction in a delay slot was decoded. (g) An instruction to rewrite a delay slot was decoded.	No	No
20	LAN INITIAL...	❍	●	●	100 Base LAN Board is being initialized.	-----	-----
21	DHCP INITIAL…	❍	●	●	The DHCP client is being initialized. *When the DHCP function is enabled.	-----	-----
22	LOW BATTERY	❍	●	❍	The voltage of the Real Time Clock Battery is 1.9V or less.	No	Yes
23	Display of error message (See Notes.)	❍	●	❍	A command error has occurred in analyzing the command.	Yes	Yes

NOTE: Description of Command Error

- *If a command error is found in a command received, 16 bytes of the command error, starting from the command code, will be displayed. (However, [LF] and [NUL] will not be displayed.)*

Example 1

[ESC] T20 G30 [LF] [NUL]

└──── Command error

The following message appears.

T20G30

Example 2

[ESC] XR; 0200, 0300, 0450, 1200, 1, [LF] [NUL]

└──── Command error

The following message appears.

XR;0200,0300,045

Example 3

[ESC] PC001; 0A00, 0300, 2, 2, A, 00, B [LF] [NUL]

└──── Command error

The following message appears.

PC001;0A00,0300,

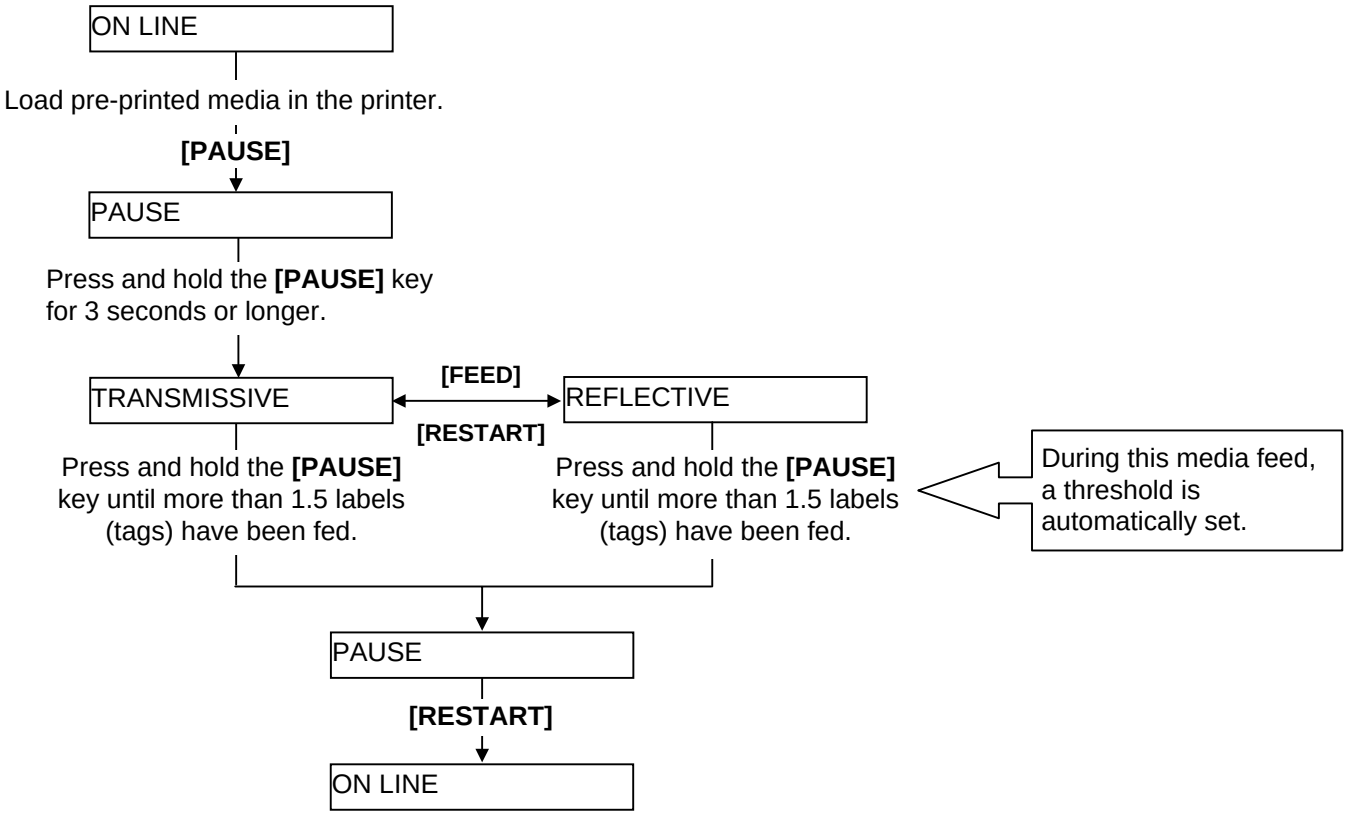
- *When the error command is shown, "? (3FH)" appears for codes other than codes 20H to 7FH and A0H to DFH.*
- *For details, please refer to the **B-852-TS22-QQ/QP-R External Equipment Interface Specification**.*

3.1 Automatic Threshold Setting

■ Outline of Automatic Threshold Setting

To maintain a constant print position the printer uses the media sensor to detect a print start position according to the difference of voltage between a print area and a gap or black mark. When the media is pre-printed, the darker (or more dense) inks can interfere with this process, causing “PAPER JAM” errors even if the media is not actually jammed.
To get around this problem, first, try an automatic threshold setting.
If the problem still occurs, then, the threshold voltage needs to be manually set. (Refer to **Section 2.3.7**.)

■ How to Perform an Automatic Threshold Setting

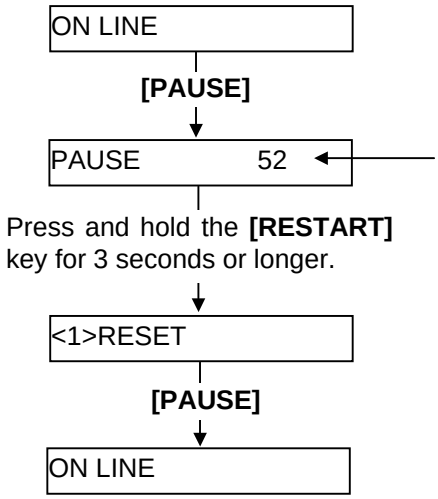

ON LINE
Load pre-printed media in the printer.
[PAUSE]
PAUSE
Press and hold the [PAUSE] key for 3 seconds or longer.
TRANSMISSIVE
[FEED]
[RESTART]
REFLECTIVE
Press and hold the [PAUSE] key until more than 1.5 labels (tags) have been fed.
Press and hold the [PAUSE] key until more than 1.5 labels (tags) have been fed.
During this media feed, a threshold is automatically set.
PAUSE
[RESTART]
ON LINE

NOTES: *1. Failure to feed more than 1.5 labels may result in an incorrect threshold setting.*
*2. While the print head is raised, the **[PAUSE]** key does not work.*
*3. When the **[PAUSE]** key is released within 3 seconds while the printer is paused, no action is taken.*
4. While the printer is feeding labels to determine a threshold value, no errors, including a paper end error, is detected.
5. If the printer still does not start printing at the proper print start position after the threshold setting operation is performed, it can be suspected that a sensor adjustment is not proper.
In this case, readjust the sensor in the system mode, then perform the threshold setting operation again. (When the backing paper of a label paper is too thick, the transmissive sensor should be readjusted.)
In addition, make sure that the type of sensor for Issue and Feed commands is set to “3: Transmissive sensor (when using a preprinted label)” or “4: Lower Reflective sensor (when using a manual threshold value)”.

3.2 Reset Operation

A reset operation clears the print data sent from the host computer to the printer, and returns the printer to an idle condition.

■ How to Perform a Reset Operation



Press the **[PAUSE]** key to stop printing

The number of remaining print count

NOTE: *When the **[PAUSE]** key is pressed during printing, the number of remaining print count is displayed.*

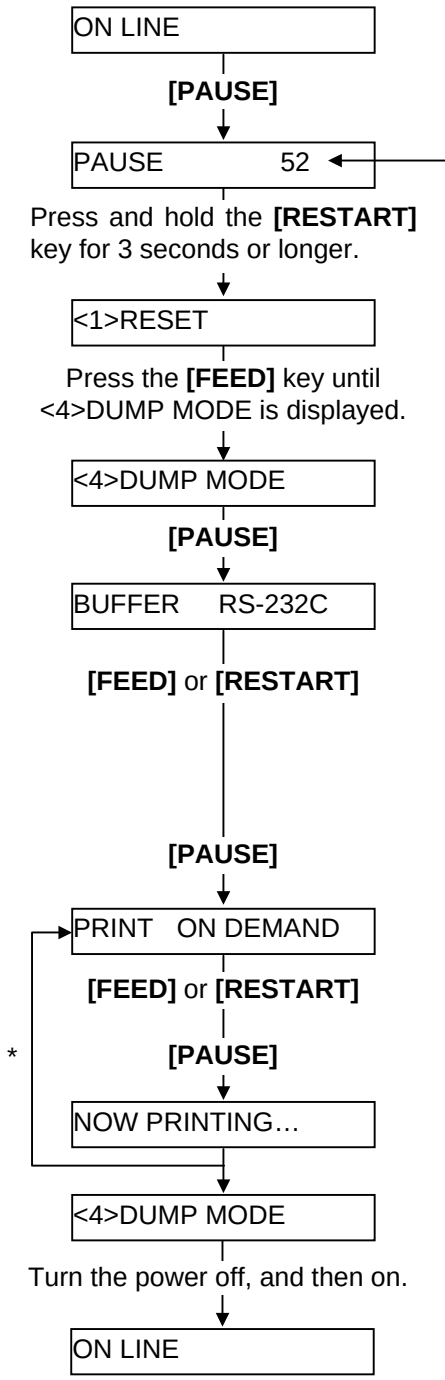
Data sent from the host computer is cleared.

NOTE: *Failure to press the **[RESTART]** key for 3 seconds or longer causes the printer to restart printing. However, when a communication error or command error occurs, the printer returns to an idle state.*

3.3 Dump Mode

In dump mode, data in the receive buffer are printed. Data are expressed in hexadecimal values. This operation allows the user to verify programming commands or debug the program.

■ How to Perform a Dump Operation



Press the **[PAUSE]** key to stop printing.

The number of remaining print count

NOTE: *When the **[PAUSE]** key is pressed during printing, the number of remaining print count is displayed.*

Press the **[PAUSE]** key to enter the dump mode.

Choose a receive buffer to be dumped using the **[FEED]** or **[RESTART]** key.

- RS-232C: RS-232C receive buffer
- CENTRO: Centronics receive buffer
- NETWORK: Network interface receive buffer
- BASIC 1: BASIC interpreter (Interface → Interpreter buffer)
- BASIC 2: BASIC interpreter (Interpreter → Printer buffer)
- USB: USB receive buffer

Choose a printing method using the **[FEED]** or **[RESTART]** key.

- ON DEMAND: Prints 166 lines of data (approx. 50cm), then stops.
  * To print the subsequent data, choose a printing method again and press the **[PAUSE]** key.
- ALL: Prints all data in the receive buffer, then stops.

The printer starts printing data in the receive buffer.

After all data has been printed, the display returns to <4>DUMP MODE.

The data in the receive buffer is printed as follows:

```
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
7B 41 58 3B 2B 30 30 30 2C 2B 30 30 30 2C 2B 30   {AX;+000,+000,+0
30 7C 7D 7B 44 30 37 37 30 2C 31 31 30 30 2C 30   0|}{D0760,1100,0
37 34 30 7C 7D 7B 43 7C 7D 7B 4C 43 3B 30 30 33   740|}{C|}{LC;003
30 2C 30 30 32 30 2C 30 30 33 30 2C 30 36 36 30   0,0020,0030,0660
2C 30 2C 32 7C 7D 7B 4C 43 3B 30 30 37 30 2C 30   ,0,2|}{LC;0070,0
30 32 30 2C 30 30 37 30 2C 30 36 36 30 2C 30 2C   020,0070,0660,0,
39 7C 7D 7B 4C 43 3B 30 30 35 30 2C 30 30 32 30   9|}{LC;0050,0020
                                  :
                                  :
                                  :
44 45 46 47 48 49 4A 7C 7D 7B 50 43 31 30 3B 30   DEFGHIJ|}{PC10;0
33 35 30 2C 30 34 30 30 2C 31 2C 31 2C 4B 2C 30   350,0400,1,1,K,0
30 2C 42 3D 41 42 43 44 65 66 67 68 69 6A 6B 6C   0,B=ABCDefghijkl

6D 6E 6F 70 7C 7D 7B 50 56 30 32 3B 30 33 33 30   mnop|}{PV02;0330
2C 30 36 36 30 2C 30 32 37 30 2C 30 32 35 30 2C   ,0660,0270,0250,
41 2C 30 30 2C 42 3D 42 7C 7D 7B 50 56 30 33 3B   A,00,B=B|}{PV03;
                                  :
                                  :
                                  :
3B 30 39 30 30 2C 30 31 38 30 2C 54 2C 48 2C 30   ;0900,0180,T,H,0
35 2C 41 2C 30 3D 31 32 33 34 35 36 37 38 39 30   5,A,0=1234567890
41 42 43 44 45 7C 7D 00 00 00 00 00 00 00 00 00   ABCDE|}
                                  :
                                  :
```

Feed direction

Print Conditions

- Printing width: 3.9 inches (100 mm)
- Sensor selection: None
- Print speed: 4”/sec.
- Printing mode: Depends on the selection in use.
- 16 bytes/line
- Data is printed in the order from the new one to the old one.
- Data specified by the receive buffer write pointer will be printed in boldface.

Receive buffer size

Interface	Buffer size
RS-232C	1MB (65536 lines)
Centronics	1MB (65536 lines)
Network Interface	1MB (65536 lines)
BASIC 1	8KB (512 lines)
BASIC 2	8KB (512 lines)
USB	1MB (65536 lines)

Required label length

Interface	Media length*
RS-232C	198.2m
Centronics	198.2m
Network Interface	198.2m
BASIC 1	2m
BASIC 2	2m
USB	198.2m

* Media length required for printing all data in the receive buffer.

NOTE:
*If an error occurs during dumping, the printer will display an error message and stop printing. The error can be cleared by pressing the **[PAUSE]** key, and then the display will show “<4>DUMP MODE” again.*
After a recovery from the error the printer will not start printing automatically.

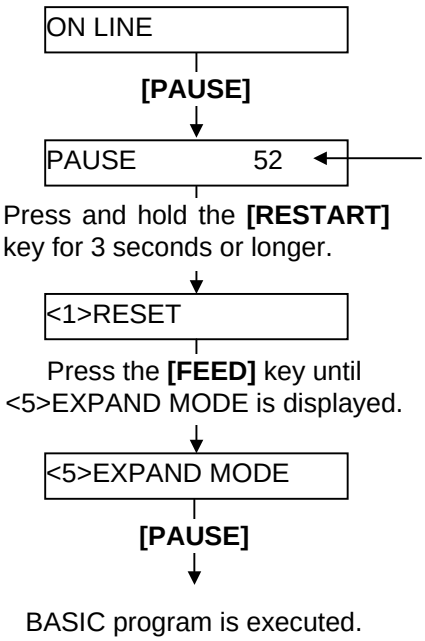
3.4 BASIC Expansion Mode

It is possible to execute the BASIC expansion mode program in BASIC expansion mode under the following conditions:

- The BASIC expansion mode program has already been loaded.
- The BASIC enable setting mode is selected.

The basic expansion mode ends when the basic expansion program is exited.

■ How to Perform BASIC Expansion



Press the **[PAUSE]** key to stop printing.

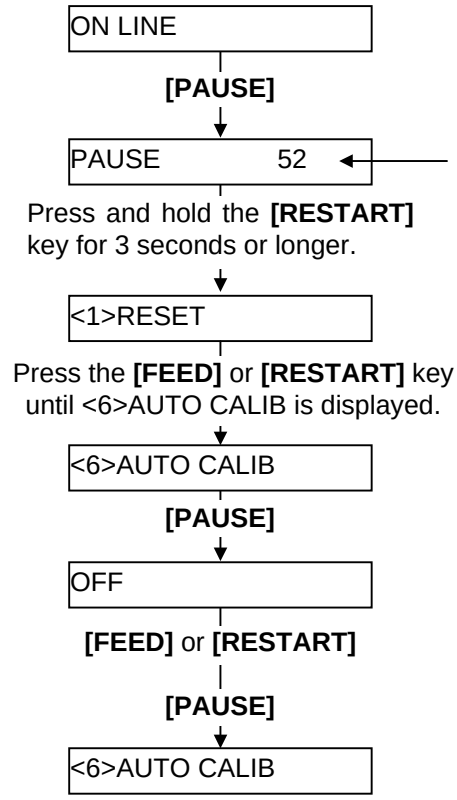
The number of remaining print count

NOTE: *When the **[PAUSE]** key is pressed during printing, the number of remaining print count is displayed.*

3.5 Automatic Calibration Setting

Whether to activate the automatic calibration at a power on time or not is selectable in the Automatic Calibration Mode. When the automatic calibration is activated, the printer feeds the media for about 160 mm each time the power is turned on or the Top Cover is opened, to detect a print start position.

■ How to Choose an Automatic Calibration Setting



Press the **[PAUSE]** key to stop printing.

The number of remaining print count

NOTE: *When the **[PAUSE]** key is pressed during printing, the number of remaining print count is displayed.*

Press the **[PAUSE]** key to enter the automatic calibration.

Choose an automatic calibration using the **[FEED]** or **[RESTART]** key.

- OFF: Not activated
- ON TRANS.: Transmissive (Feed gap) sensor is activated.
- ON REFLECT: Lower reflective (Black mark) sensor is activated.

NOTES:

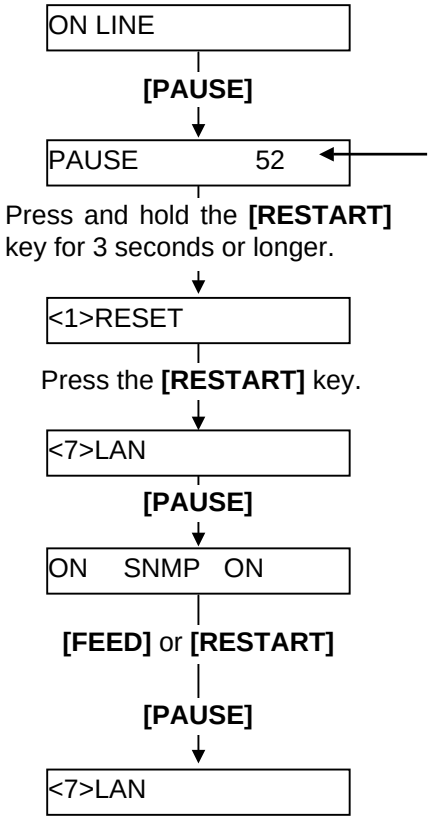
1. *When this parameter is set to ON, the printer performs an automatic calibration each time the power is turned on or the top cover is closed.*
2. *When this parameter is set to ON, the media length, effective print length, and sensor type specified in the command are ignored.*
3. *When "ON REFLECT" is selected, the lowest voltage detected by the lower black mark sensor is considered as a black mark level. And, the sum of this voltage and the manual threshold voltage will be adopted as a threshold.*
4. *When "ON TRANS" is selected, the highest voltage detected by the feed gap sensor is considered as a gap level. After subtracting the manual threshold voltage from this voltage, the result will be adopted as a threshold.*
5. *The printer feeds about 160 mm long media to detect a black mark/gap, measure the media pitch, and determine the threshold. When the printer detects more than two black marks/gaps during this media feed, the automatic calibration is stopped where 1 mm short of the bottom of a black mark or gap. If the printer cannot detect a black mark/gap under this condition by feeding the media for up to 500.0 mm, the printer will stop, resulting in a paper jam.*
6. *This function is available only when the media pitch is 10.0 mm to 150.0 mm.*
7. *When a label end or head open error occurs during an automatic calibration, the printer stops, resulting in an error.*
8. *During an automatic calibration, the ribbon motor is rotated. Even if the ribbon is not loaded, this function does not result in an error. However, the print condition will be automatically changed to "No ribbon" after the calibration ends.*

9. When the cutter is installed and a previous issue was performed in cut issue mode, paper is cut and ejected after automatic calibration completes.
10. When the automatic calibration is in operation, paper does not stop at a stop position of the strip issue.
11. An automatic forward feed is not performed immediately after an automatic calibration, even if the auto forward wait parameter is set to ON.

3.6 LAN Enable/Disable Setting

Whether to enable the LAN or not and whether to enable Simple Network Management Protocol (SNMP) or not are chosen by this menu.

■ How to Enable/Disable the LAN



Press the **[PAUSE]** key to stop printing.

The number of remaining print count

NOTE: *When the **[PAUSE]** key is pressed during printing, the number of remaining print count is displayed.*

Press the **[PAUSE]** key to enter the LAN Enable/disable setting menu.

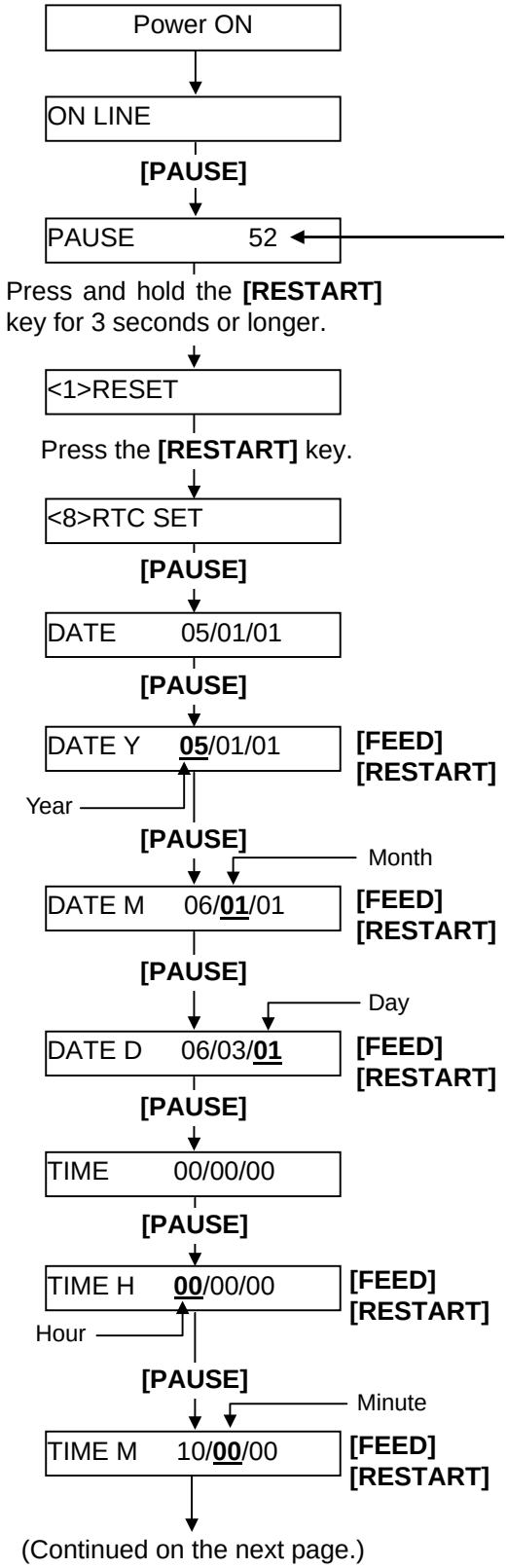
Choose one of the following using the **[FEED]** or **[RESTART]** key.

- ON SNMP ON: LAN and SNMP are enabled.
- ON SNMP OFF: LAN is enabled, but SNMP is disabled.
- OFF: LAN is disabled.

3.7 Real Time Clock (RTC) Setting

This module holds the current time: year, month, day, hour, minute, second.

■ How to perform the Real Time Clock Setting



Turn on the printer. "ONLINE" will be displayed on the LCD.

Press the **[PAUSE]** key to turn the printer to pause state.

The number of remaining print count

NOTE: *When the **[PAUSE]** key is pressed during printing, the number of remaining print count is displayed.*

Hold down the **[RESTART]** key until the printer enters the system mode.

When "<1>RESET" is displayed on the LCD, press the **[RESTART]** key until "<8>RTC SET" appears.

Press the **[PAUSE]** key. The date currently stored in the real time clock is displayed.

Pressing the **[PAUSE]** key enables changing the Year.

Set the Year with the **[FEED]** or **[RESTART]** key. Pressing the **[PAUSE]** key fixes the Year and causes the cursor to move to the Month.

Set the Month with the **[FEED]** or **[RESTART]** key. Pressing the **[PAUSE]** key fixes the Month and causes the cursor to move to the Day.

Set the Day with the **[FEED]** or **[RESTART]** key. Press the **[PAUSE]** key to fix the Day. Then, the time currently stored in the real time clock is displayed.

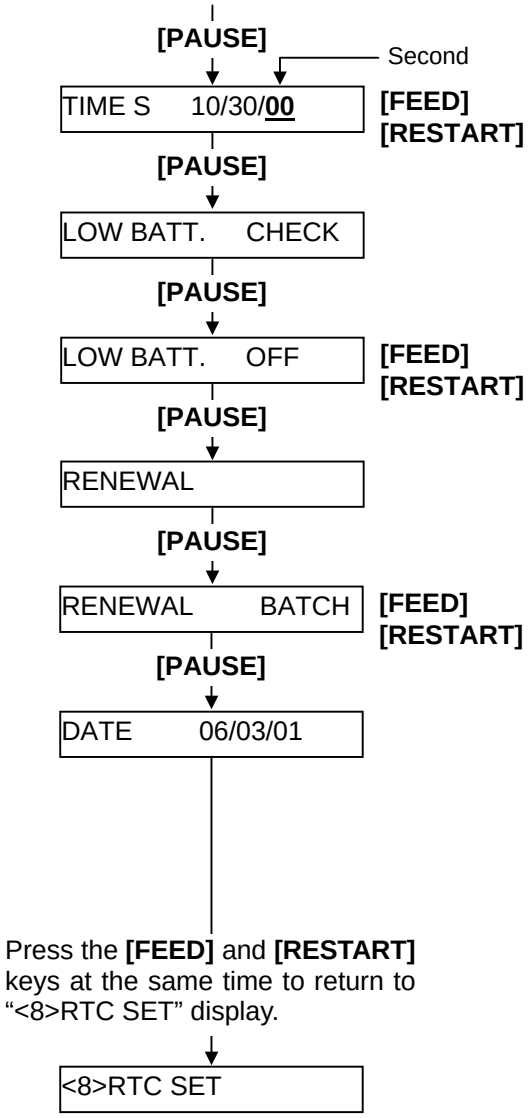
Pressing the **[PAUSE]** key enables setting the Hour.

Set the Hour with the **[FEED]** or **[RESTART]** key. Pressing the **[PAUSE]** key fixes the Hour and cause the cursor to move to the Minute.

Set the Minute with the **[FEED]** or **[RESTART]** key. Pressing the **[PAUSE]** key fixes the Minute and cause the cursor to move to the Second.

(Continued on the next page.)

(Continued from the previous page)



Set the second with the **[FEED]** or **[RESTART]** key. Press the **[PAUSE]** key to fix the Second. Then, the Low Battery Check selection screen is displayed.

Pressing the **[PAUSE]** key enables choosing whether to activate the low battery check function or not. Set the function to ON or OFF with the **[FEED]** or **[RESTART]** key.

ON: Low battery check function is activated.
OFF: Low battery check function is not activated. (Default)

Press the **[PAUSE]** key to fix the setting. Then, the RTC Data Renewal Timing setting screen is displayed.

Pressing the **[PAUSE]** key enables choosing the RTC data renewal timing.

Choose PAGE or BATCH with the **[FEED]** or **[RESTART]** key.

PAGE: A real time can be printed on each media. However, the printer needs to stop the motion before printing each media to read the real time clock data.

BATCH: Batch print is possible. However, the same time is printed on the all media issued in a batch because the real time clock data is read only for the first media.

Press the **[PAUSE]** key to fix the setting. Then, the current date is displayed.

NOTES:

1. *Be sure to load the battery and set the low battery check function to ON whenever the real time clock is used. If the battery is not loaded or the battery voltage is low, the real time clock data is erased at the power off time.*
2. *When the low battery check function is set to ON, the printer stops at the power on time due to a "LOW BATTERY" error if the battery voltage is 1.9V or less. As a restart is invalidated in this case, hold down the **[RESTART]** key to cause the printer to enter <1>RESET mode, access the Real Time Clock setting mode, and set the low battery function to OFF.*
3. *The factory setting for the low battery check function is OFF.*
4. *To enable the real time clock function, set the low battery check to ON.*
5. *When the low battery check is set to OFF, the RTC function is available even in a low battery state. However, the setting and check of the real time clock is required whenever the power is turned on.*
6. *When the RTC data renewal timing is set to "PAGE", the printer stops between labels ignoring the on-the-fly issue even when an Issue command is sent to print more than one label.*

4. PROGRAM DOWN LOAD

This section provides step-by-step instructions on how to setup and download the firmware to the printer. The firmware download will be made from a PC via the Centronics interface or RS-232C interface of the printer.

***NOTE**: Some examples of the screen provided in this section may vary according to the program files to be downloaded.*

4.1 Outline of Features

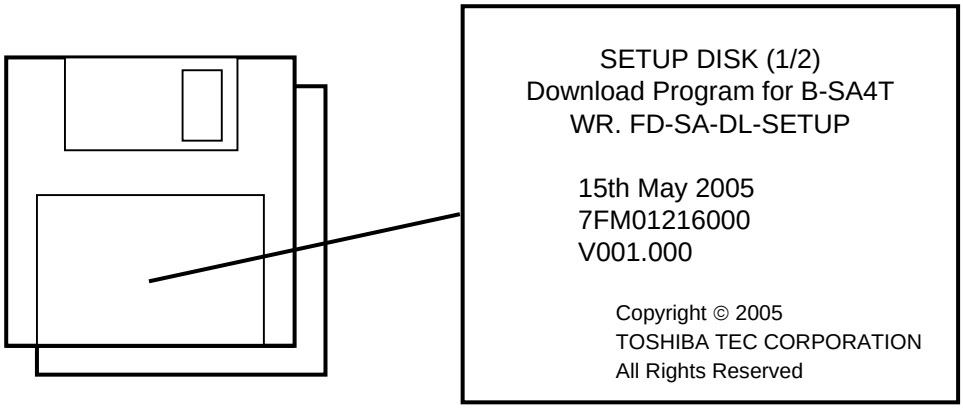
The software for performing the program download will allow the download of the Firmware (Boot program, Application program, and Character generator) from the provided FDK. The software will be run on a standard PC and communication to the printer will be via the Centronics interface or RS-232C interface.

Firmware Download

The Boot program, Application program and Character generator are installed into the printer's flash memory prior to being shipped to the customer. However, if specifications should change at a later date, this software will allow downloading firmware updates to the printer.

4.2 Download Program Installation

Before you can communicate from your PC to the printer, you must first copy the "B-SA series Download Program" from the two FDKs provided to the hard disk of your PC. This program allows you to download the firmware (Boot program, Application program and Character generator) to the printer.



4.2.1 System Requirements

System

- IBM Compatible PC running Windows® 98, Windows® 2000 or Windows® XP
- Installed memory of 16MB minimum (32MB recommended)
- Available Hard Disk space of 20MB or more

***NOTE:** Windows is a registered trademark of the Microsoft Corporation in the United States and other countries.*

Interface

Centronics interface or RS-232C interface

4.2.2 Setup

Setup Disk

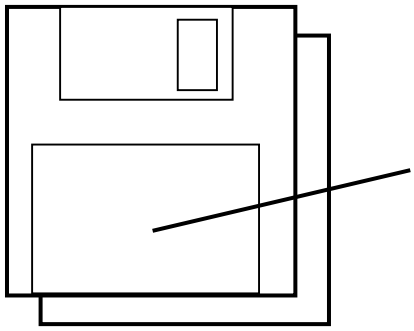
Make sure that you have all two diskettes available of the “B-SA series Download Program”.

Installation Procedure

(1) While running Windows 98, Windows 2000, or Windows XP, insert Setup Disk (1/2) into the PC floppy drive.
(2) Click on the START button then highlight RUN and click on RUN.
(3) When the RUN display appears, type in A:\SETUP and click on OK.
(4) Install the Download Program by following the messages on the display.

4.3 Firmware Download

If it ever becomes necessary to upgrade the firmware in the printer you will be supplied with a floppy disk containing the latest firmware revision similar to that shown below.



Firmware FDK (Main)

B-SA4T Series
FIRMWARE(MAIN)V1.0
WR. FD-SA-FIRM-MAIN
MAIN:SA4T-MAIN-20050515.EXE
(SX4-MAIN-20050515.ROM)
7FM01217000:D700
15th May 2005
V001.000
Copyright© 2005
TOSHIBA TEC CORPORATION
All Rights Reserved

Firmware FDK (Boot/CG)

B-SA4T Series
FIRMWARE(BOOT/CG)V1.0
WR. FD-SA-FIRM-BOOT
BOOT:B-SA4T-BOOT-20050515.ROM
7FM01218000:8B00
C/G :B-SA4T-CG-20050515.ROM
7FM01218000:AE00
15th May 2005
V001.000
Copyright© 2005
TOSHIBA TEC CORPORATION
All Rights Reserved

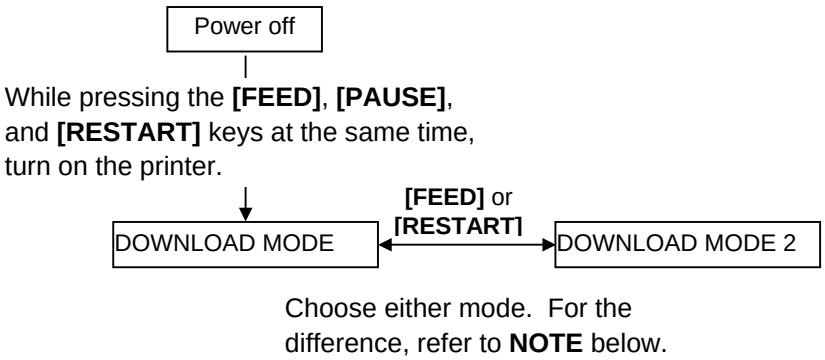
The following paragraphs give the download procedure that the firmware (Boot program, Application program and Character generator) is copied onto the PC hard disk before being transferred to the printer.

Before starting the download procedure

- Copy the firmware program contained in the FDKs to your specified directory of the hard disk. If the file format of the file installed into the FDK is “*.EXE”, click it twice to decompress into “*.ROM” file.

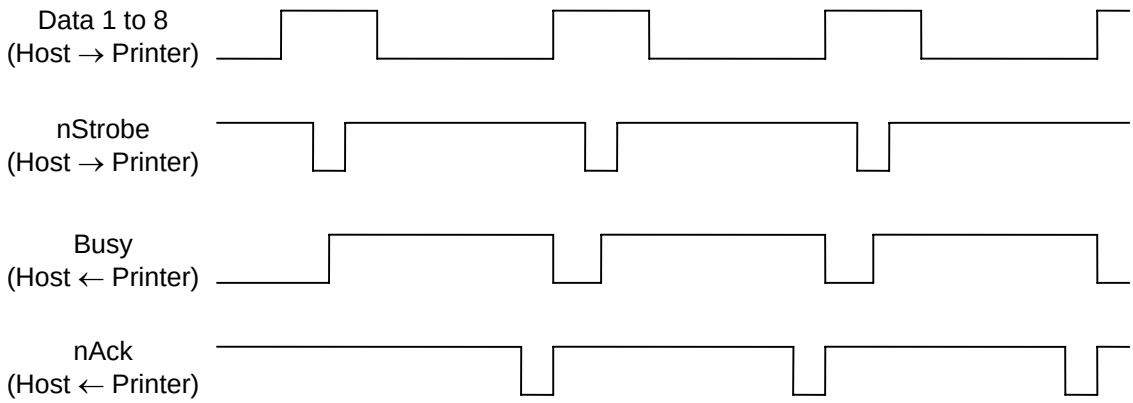
- Connect the printer to your PC with the Centronics I/F cable or the RS-232C I/F cable. For the Centronics communication, if the printer port has been allocated to LPT 1, change to another one temporarily. Failure to do this will disable you from firmware download.

1. First, start the printer in download mode.

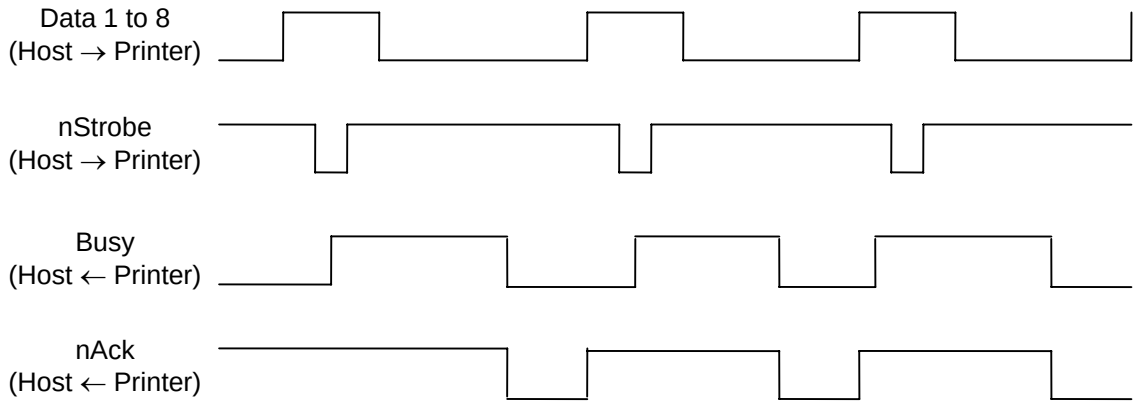

Power off
While pressing the [FEED], [PAUSE], and [RESTART] keys at the same time, turn on the printer.
[FEED] or [RESTART]
DOWNLOAD MODE
DOWNLOAD MODE 2
Choose either mode. For the difference, refer to NOTE below.

***NOTE**: Centronics interface ACK/BUSY timing is different between "DOWNLOAD MODE" and "DOWNLOAD MODE 2". If data cannot be downloaded in "DOWNLOAD MODE", choose "DOWNLOAD MODE 2" and retry downloading.*

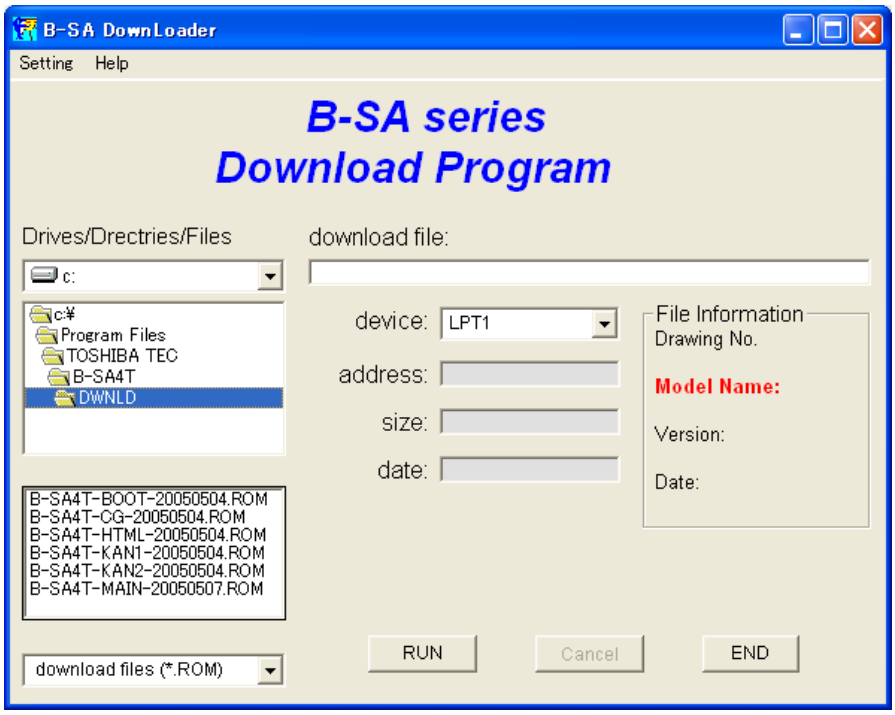
DOWNLOAD MODE (default)



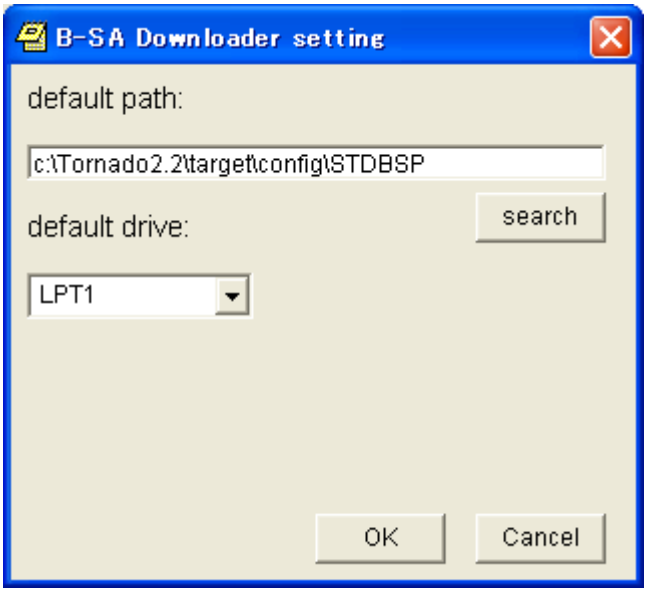
DOWNLOAD MODE 2



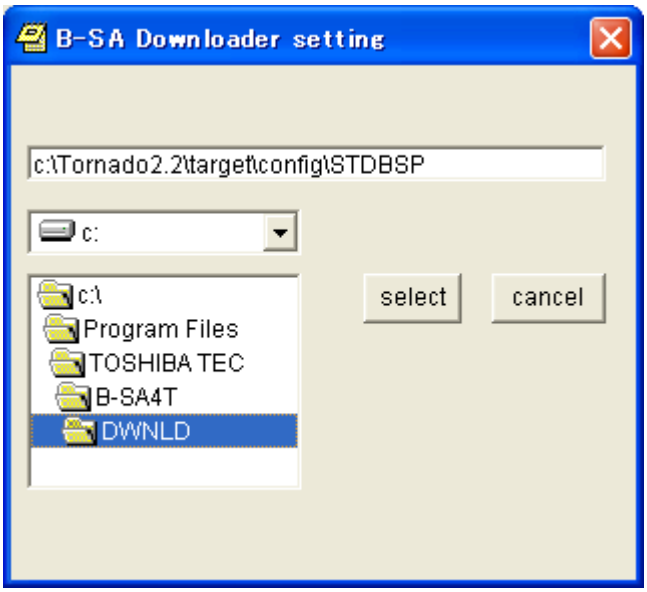
2. Turn on the PC power and start Windows.
3. Click on the START button to access the program menu.
4. Highlight “TOSHIBA TEC”, ”B-SA4T” and “Dwnld”, and click on “B-SA4T Downloader” to start up the download program. The main menu screen appears.



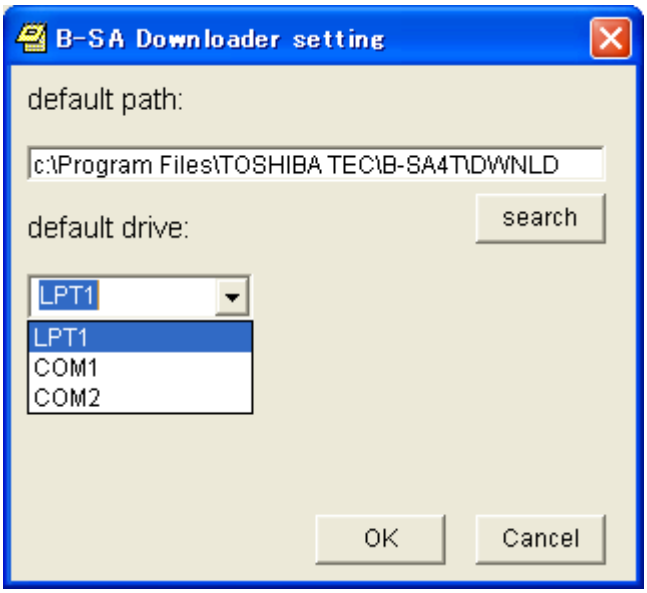
5. On the main menu screen, perform Default Device setting and Default Path setting in the following procedure.
   1) Click on “Setting” on the upper left corner of the main menu screen.
   2) Click on “Open setting menu” to show the sub menu screen as shown below.



3) Click on the Search button on the above screen, and show the sub menu screen as shown below. Select a directory to be set as the default path.
4) Click on the Select button and then the OK button. The default path setting is completed. This setting will be effective when you start up Windows next time.

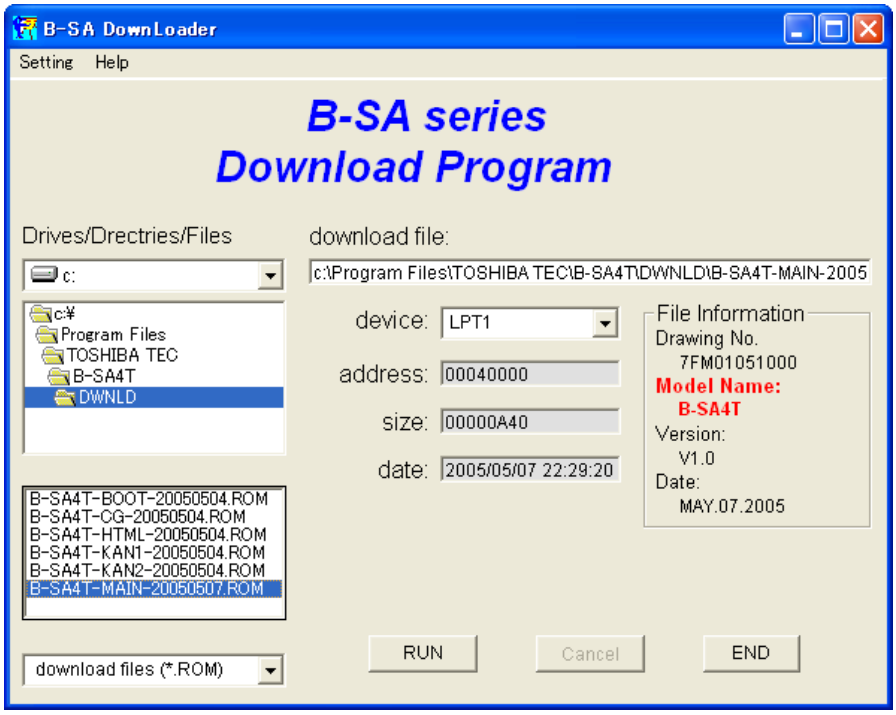


5) Select a device to be set as the default device, and then click on the OK button. The default device setting is completed. This setting will be effective next time you start up Windows.

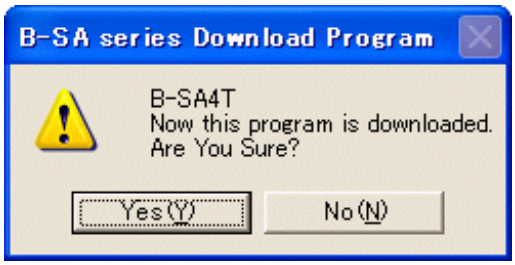


NOTES: *1. When COM1 or COM2 is selected as the default drive, communications parameter will be fixed as follows; Baud rate: 115200bps, Parity: even, Data Length: 8 bits, and Stop Bit: 1 bit.*
2. The default device can be set on the main menu screen, however, it will be cleared when you exit the download program.

6. Select the drive directory in which the firmware file (*.ROM) is stored, and the file name to be downloaded. (File information will be shown on the right side of the screen.) Click on the RUN button.



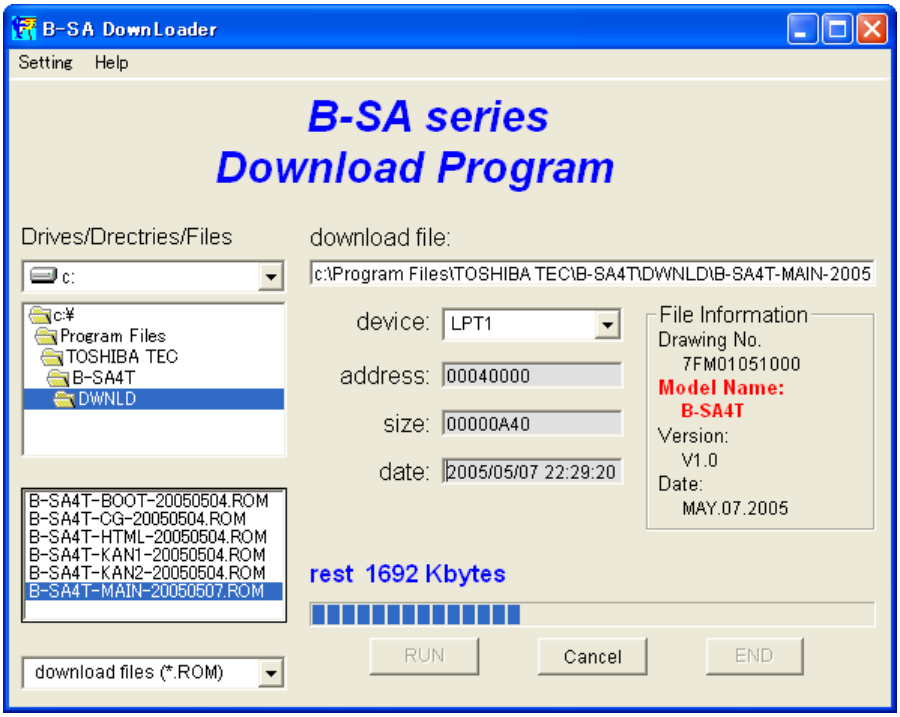
7. When the following message screen appears, click on the Yes button to start the program download. To cancel a download, click on the No button.



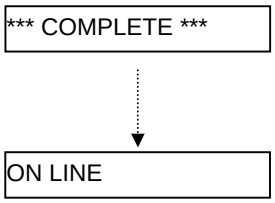
NOTE: *While downloading, the following message will appear on the LCD display of the printer, respectively.*

Data in the Flash ROM is being erased.:	ERASING…
The printer is receiving data.:	RECEIVING…
Data is being written into the Flash ROM.:	PROGRAMMING…

8. While the printer is preparing for the downloading, part of the screen may be disordered. After approximately 15 seconds, the following screen will appear causing the firmware to be transferred.



9. After the firmware has been transferred to the printer successfully, the display returns to the main menu screen.
10. After data has been written into the Flash ROM successfully, the message "*** COMPLETE ***" appears on the LCD display. And then the printer will restart automatically.



NOTE: *If the printer does not restart and keeps on displaying the message "*** COMPLETE ***", wrong firmware may have been downloaded. Confirm the model of the firmware, and then download a proper one to the printer again.*

11. Click on the END button to terminate the download program.